

# Diabetes Prevention in AI/AN Communities: *Turning Hope into* *Reality*



## The Special Diabetes Program for Indians: Where are we in 2002?

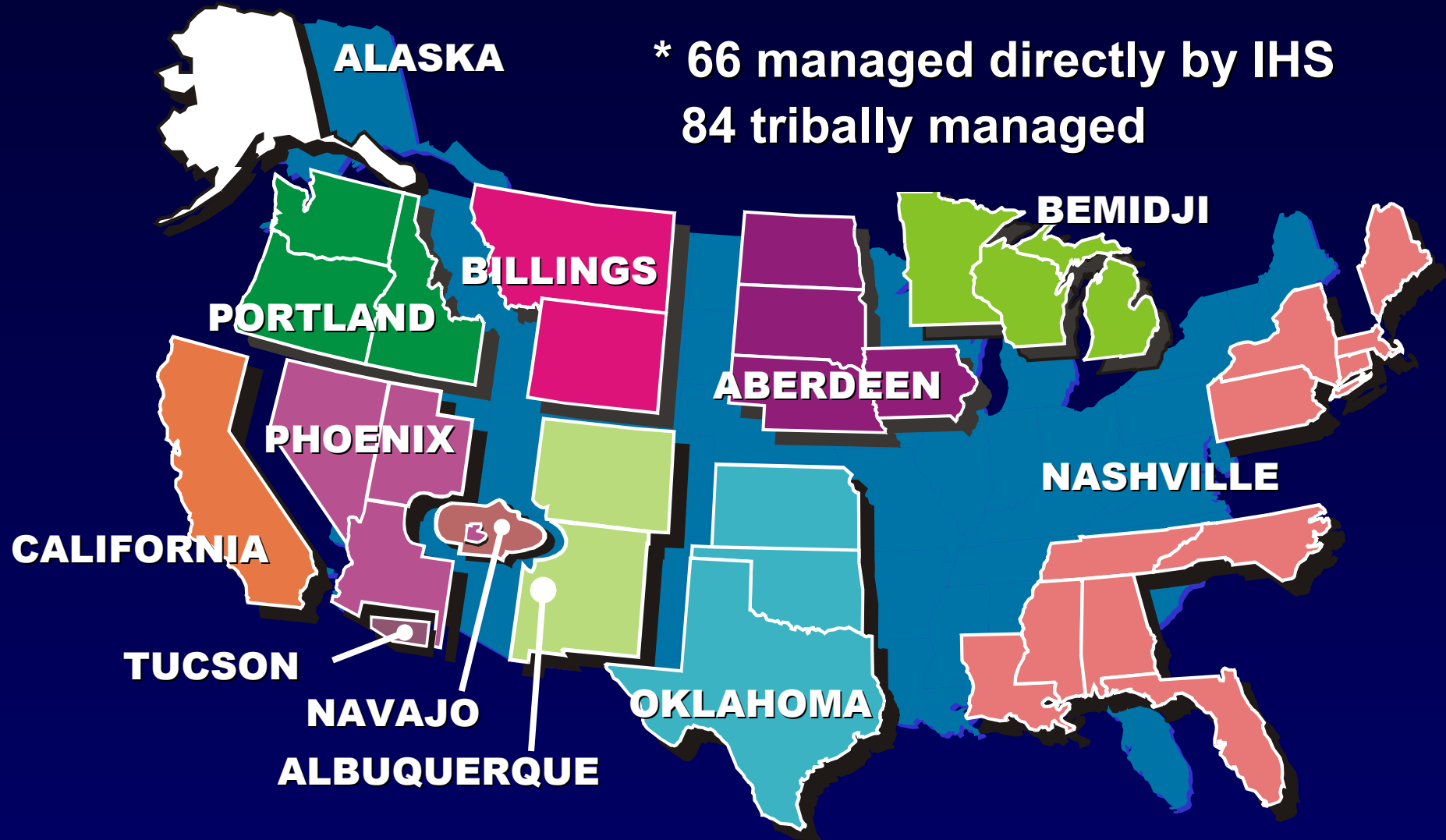
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[www.ihs.gov/medicalprograms/diabetes](http://www.ihs.gov/medicalprograms/diabetes)

# ***The Special Diabetes Program for Indians: Where are we in 2002?***



- ***History of the Special Diabetes Program for Indians***
- ***Evaluation of the Special Diabetes Program for Indians***
- ***Outcomes of the Special Diabetes Program for Indians***
- ***Future directions of the Special Diabetes Program for Indians***

# 150 Service Units\* in 12 Areas Located in 35 States



# Indian Health Service: Health Care Services



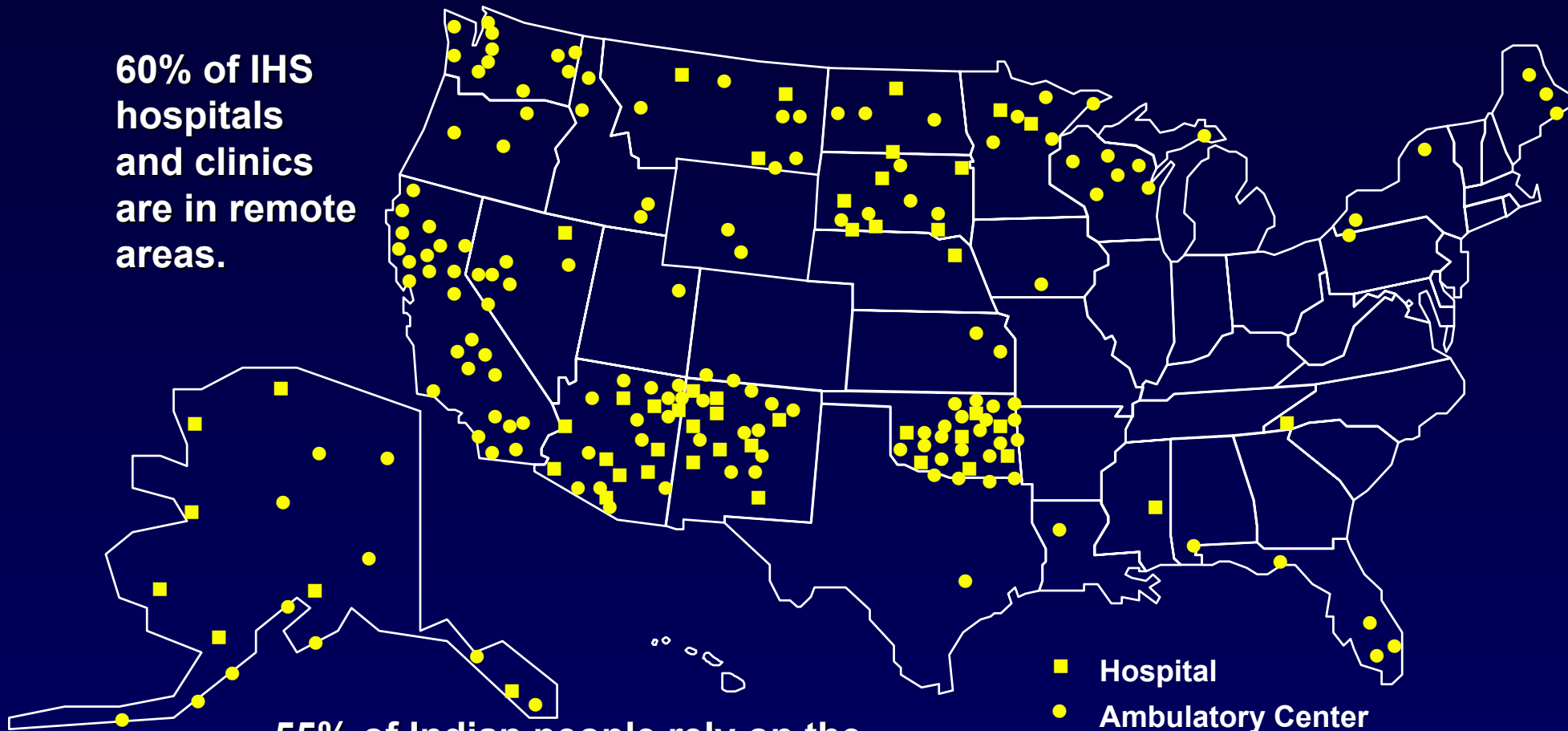
IHS services are provided:

- *directly* through IHS inpatient and outpatient facilities
- through tribally *contracted* and operated health programs
- health care *purchased* from more than two thousand private providers

The Indian health care system is comprised of 37 hospitals (13 tribal) and >300 IHS/tribal/urban outpatient facilities

# A Predominantly Rural Primary Care System

60% of IHS hospitals and clinics are in remote areas.



55% of Indian people rely on the Indian Health Service as the only source of health care coverage

# Indian Health Service: Clinical Staff



**The IHS clinical staff consists of approximately:**

- **840 physicians,**
- **380 dentists,**
- **100 physician assistants, and**
- **2,580 nurses.**
- **Other allied health professionals, such as nutritionists, health administrators, engineers, and medical records administrators.**

**\*\* There is approximately a 10% vacancy rate for health professional positions in the IHS.**

# History of Diabetes Data in the IHS



- History of IHS
- **History of IHS National Diabetes Program**
- IHS Standards of Care for Diabetes
- IHS Diabetes Care & Outcomes Audit
- *Special Diabetes Program for Indians*
- Future directions: translation of the Diabetes Prevention Program

# **Indian Health Service: History**



## **Diabetes Program authorized through the Indian Health Care Improvement Act:**

- **National Office administers program**
- **Conduct surveillance & evaluation activities**
- **Model Diabetes Programs (19) in specific  
IHS Areas**
- **Diabetes Control Officers (now called “Area  
Diabetes Consultants”) in each Area**



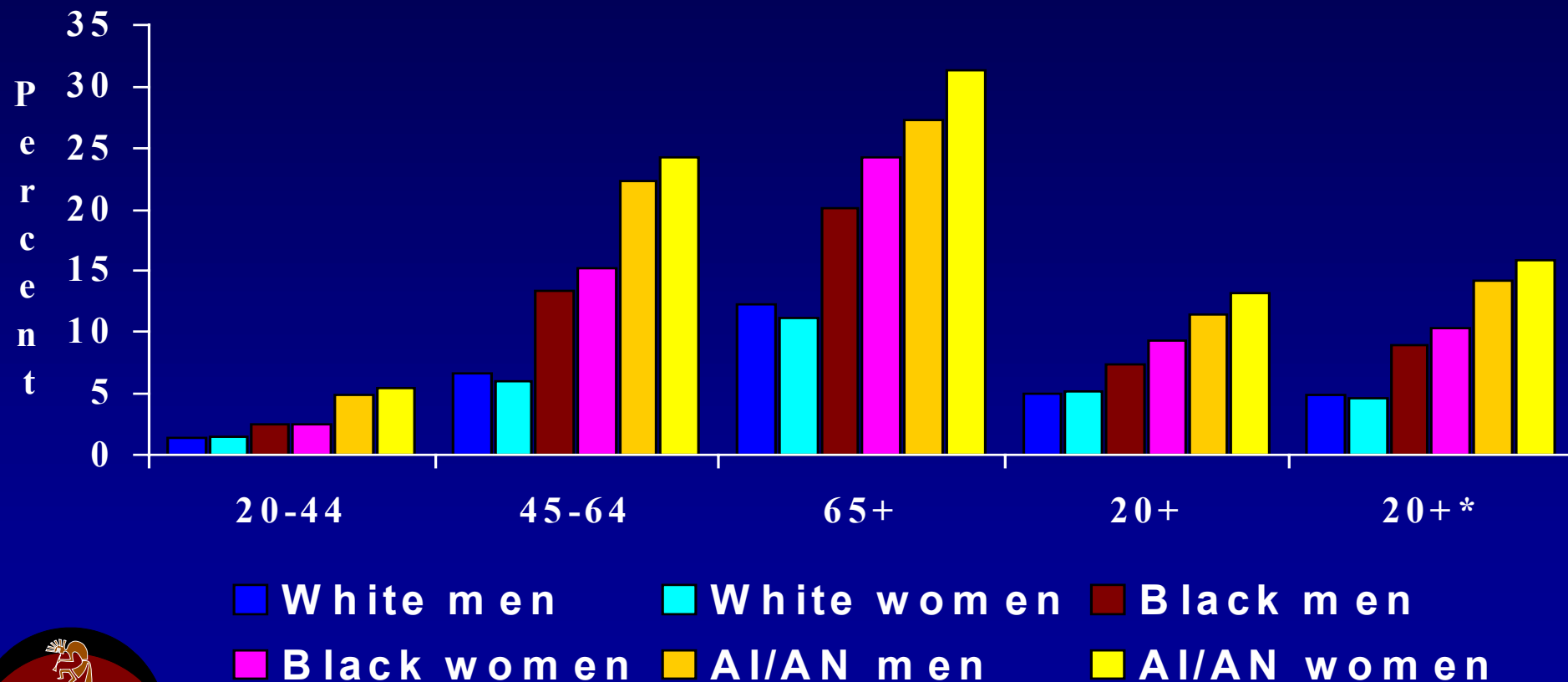
# **IHS National Diabetes Program**

**1979 - 1985**



- **IHS care based on infectious disease model**
- **Diabetes studies in Pima Indians**
- **National Commission on Diabetes**
- **Program established 1979 at Headquarters West in Albuquerque, NM via IHClA**
- **Model Diabetes Programs, Diabetes Control Officers**
- **Issues: awareness, how to treat, & lack of adequate data and surveillance**

# Prevalence of diagnosed diabetes among adults, by age, race, and sex, U.S. 2000



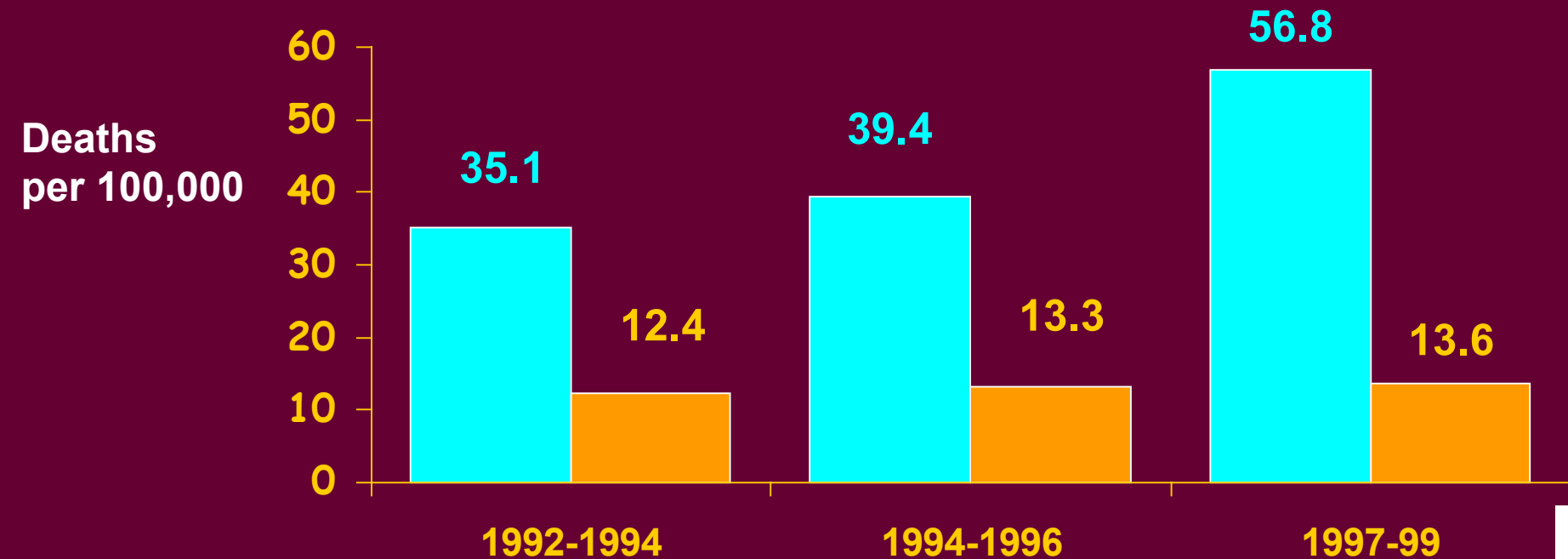
\*Age-adjusted based on the 2000 U.S. population  
 Source: 1997-99 National Health Interview Survey (NHIS)  
 and 2001 Indian Health Service outpatient database.

# Diabetes Mortality Rate

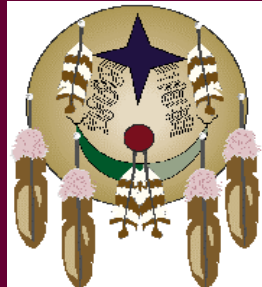
IHS-Wide\* vs U.S. All Races‡ 1992-1999

Age adjusted

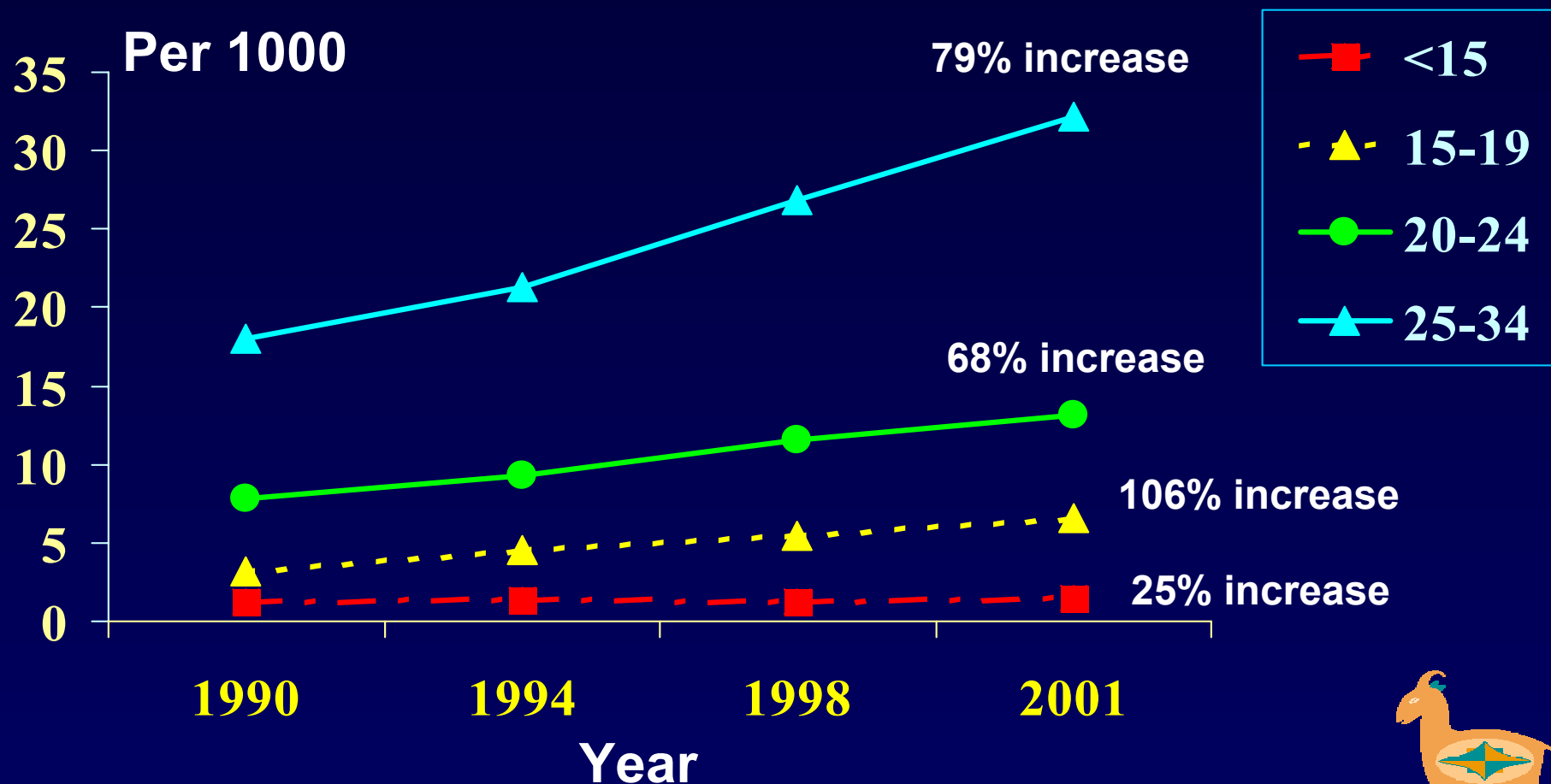
■ IHS-Wide ■ US All Races



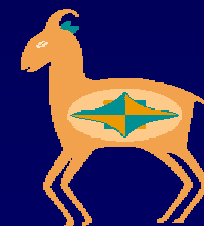
Source: \* IHS Program Statistics  
‡ National Center for Health Statistics



# Prevalence of diagnosed diabetes among children and young people by age group, 1990-2001



Source: IHS Diabetes Program Statistics



# History of Diabetes Data in the IHS




- History of IHS
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- **IHS Diabetes Care & Outcomes Audit**
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# **IHS Standards of Care for Diabetes and IHS Diabetes Care & Outcomes Audit 1985 - 1997**



- **Clinical care of diabetes (MDP experience)**
- **Consistency: standards and guidelines**
- **Measure and enhance delivery & quality of care**
- **Clinical & public health approach**
- **Diabetes network for rapid translation**
- **Staged Diabetes Management™ (SDM)**
- **Issues: provider awareness & data quality**

# IHS Standards of Care for Diabetes

- 
- **demographic information**
  - **monitoring: baseline, yearly,  
each visit**
  - **clinical, preventive and  
education measures**

# Annual Diabetes Care and Outcomes Audit

- based on IHS Standards of Care for Diabetes
- voluntary participation
- 87 process & outcome measures
- summary rate constructed for each measure
- uses Epi Info epidemiologic software
- reports generated for local, regional & national levels



# Annual Diabetes Care and Outcomes Audit

## Methods

- 151 facilities, 16,798 charts
- nationwide
- all ages
- 1986-2001

Source: IHS National Diabetes  
Program Statistics 1986-2001

# Annual IHS Diabetes Care & Outcomes Audit

## Sampling Strategy

- **systematic random sample**
- **uniform definitions**
- **trained reviewers**
- **sample size to permit determination of  $\pm 10\%$  of true rate with 9.0 power**

# Annual IHS Diabetes Care & Outcome Audit

## Results: Age & Gender

- mean age - 54.4 yrs (total sample)  
54.9 years (women)  
53.7 years (men)
- 26% were over 65;
- 18% were under age 40
- 58% women, 42% men

# Annual IHS Diabetes Care and Outcome

## Results: Duration of Diabetes

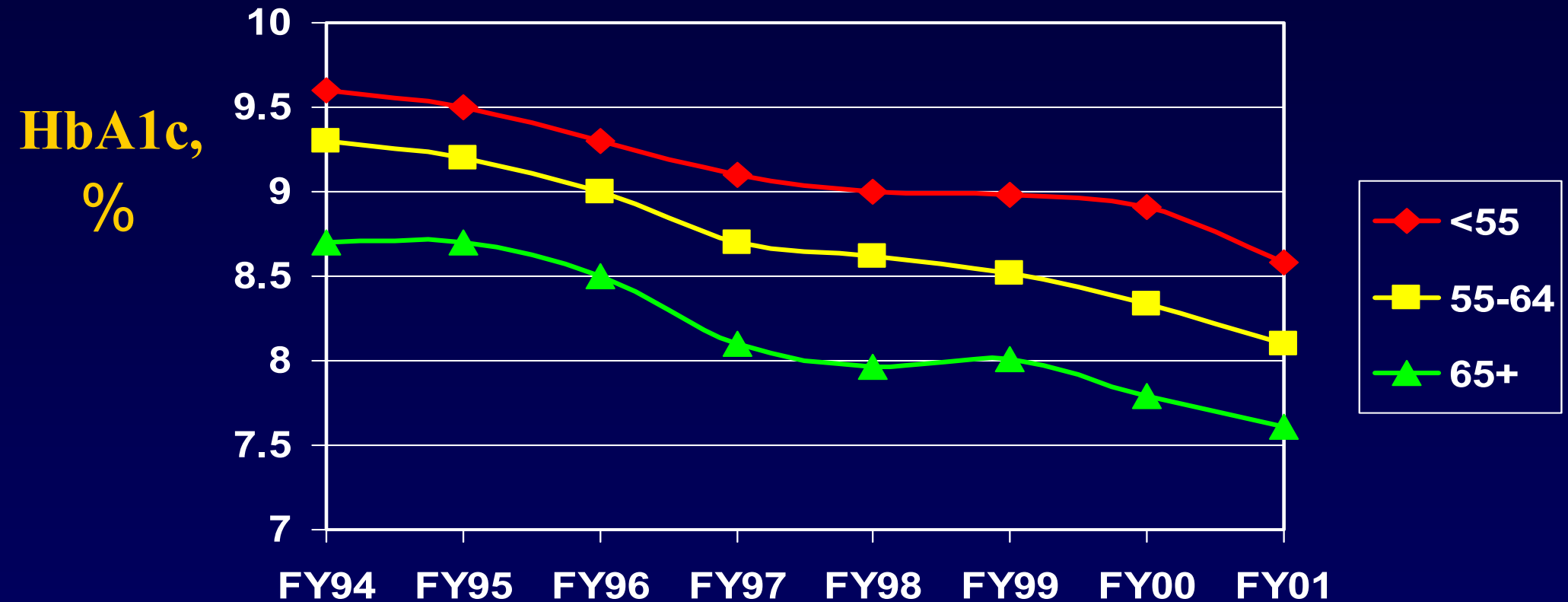
- **Less than 5 years - 39%**
- **5-10 years - 31%**
- **Over 10 years - 30%**

Source: IHS National Diabetes  
Program Statistics, 2001

# Diabetes Care & Outcomes Audit

## Glycemic control

1994-2001

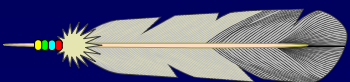
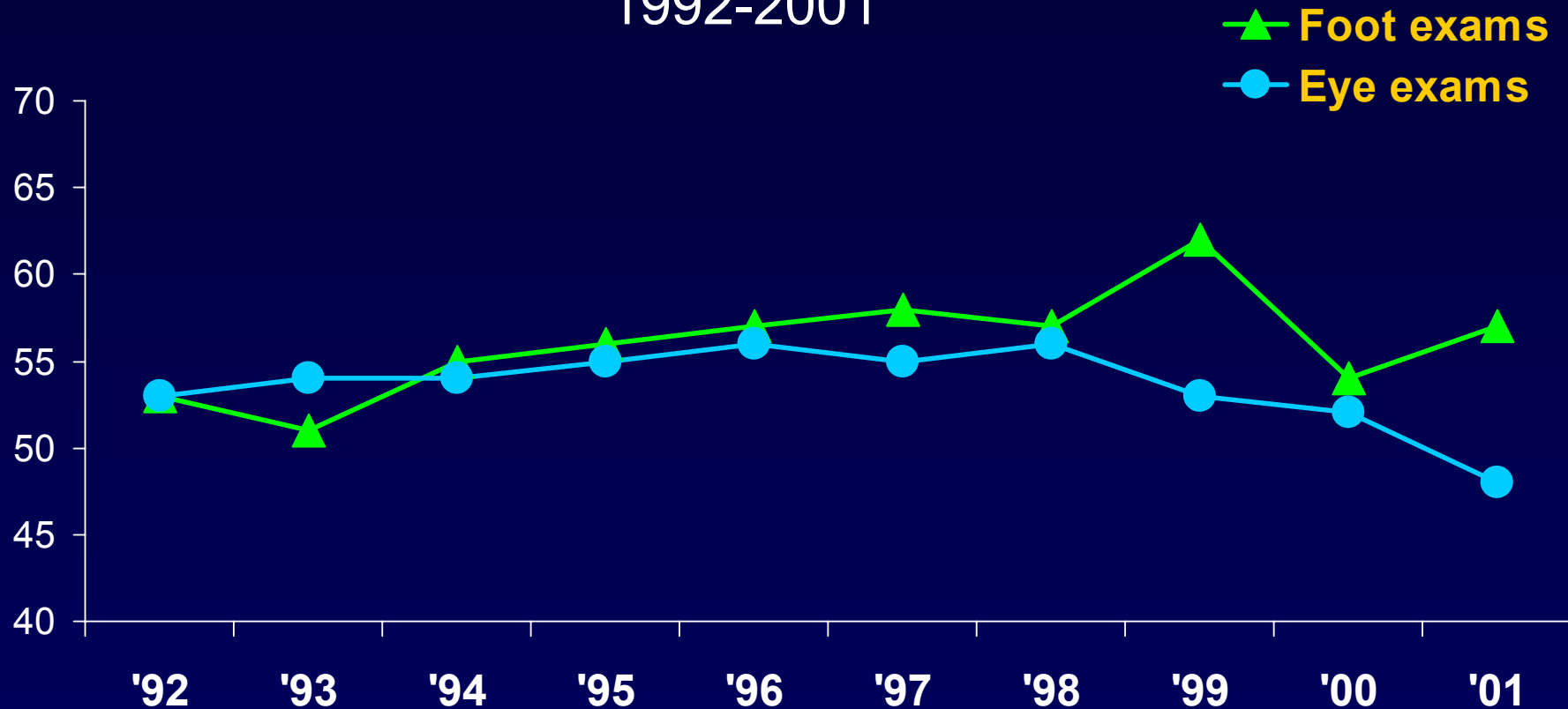


\* $p < 0.0001$  comparing mean HbA1 levels in FY94 and FY01

Source: IHS National Diabetes  
Program Statistics 1994-2001

# Diabetes Care & Outcomes Audit

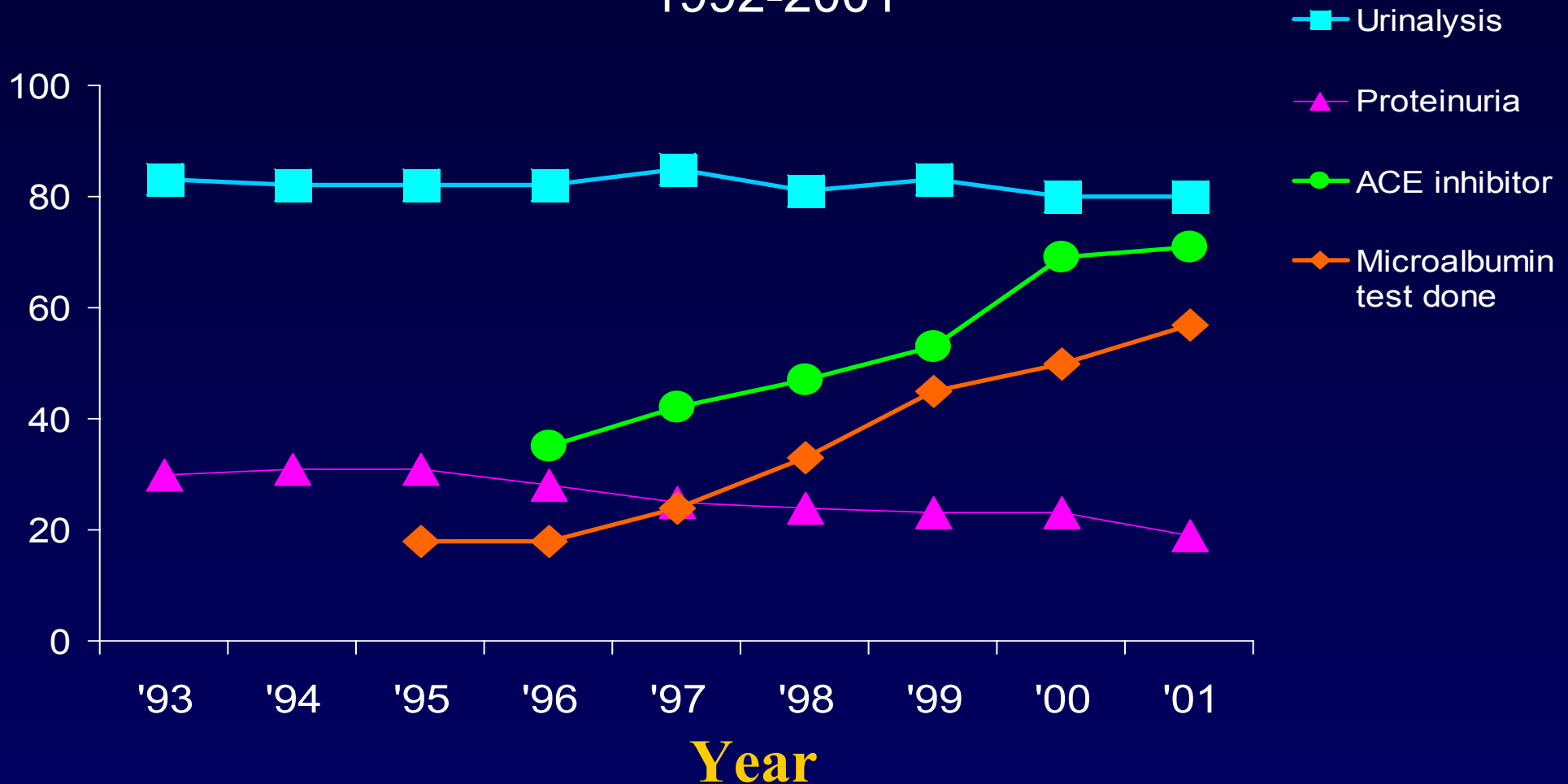
## Foot & Eye Exams 1992-2001



Source: IHS National Diabetes  
Program Statistics 1992-2001

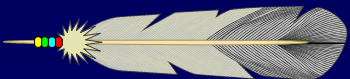
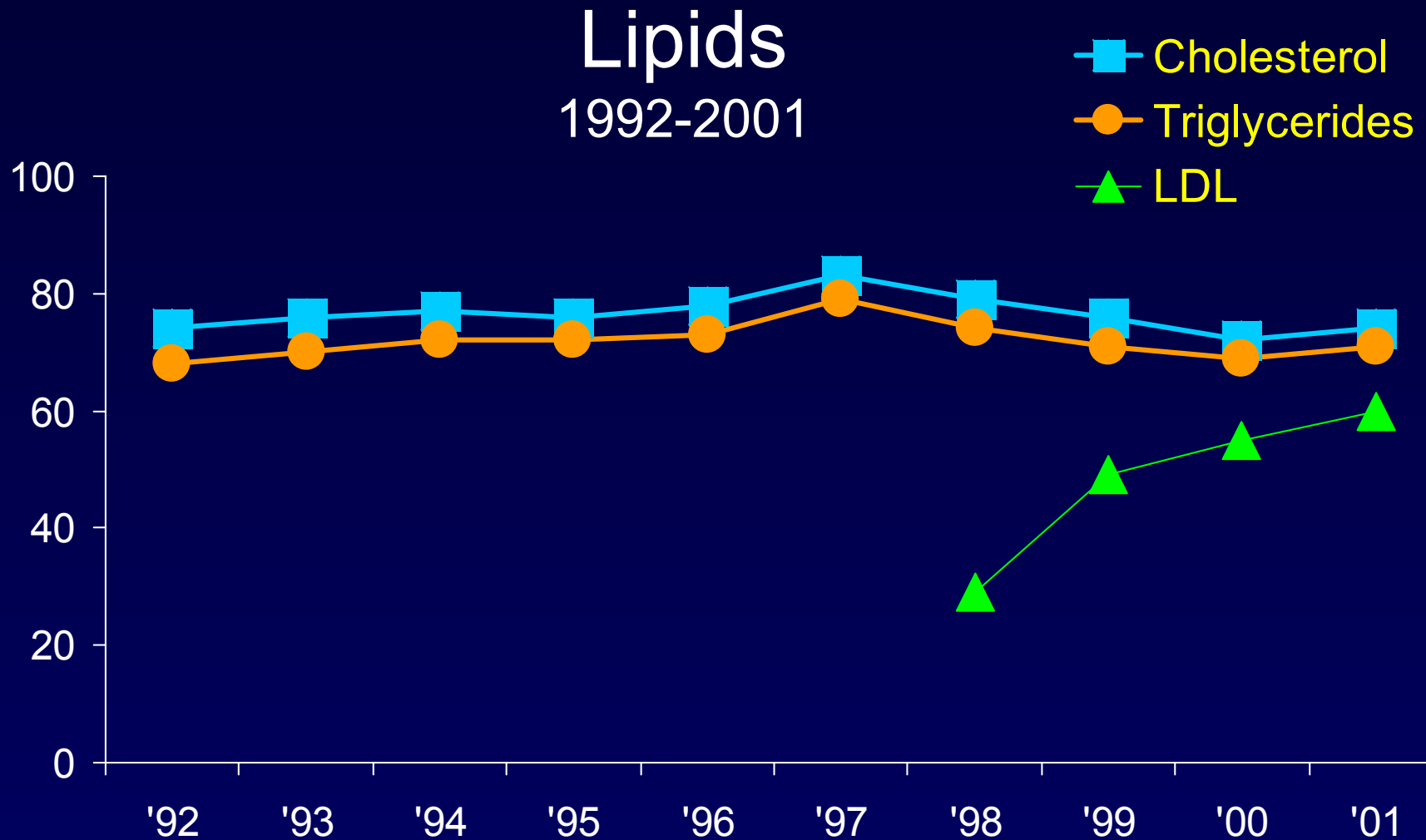
# Diabetes Care & Outcomes Audit

## Testing for Kidney Disease 1992-2001



Source: IHS National Diabetes  
Program Statistics 1993-2001

# Diabetes Care & Outcomes Audit

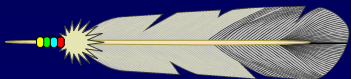
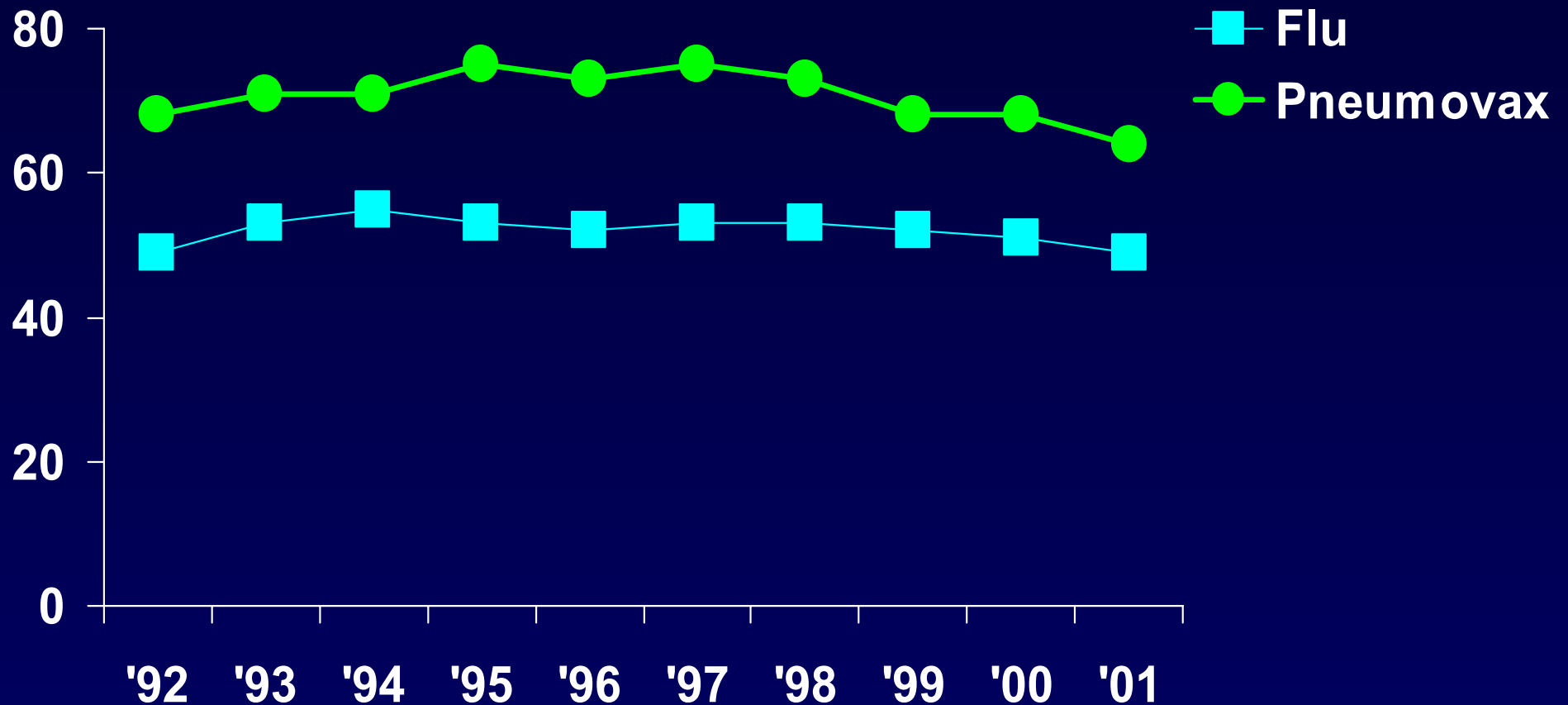


Source: IHS National Diabetes  
Program Statistics 1992-2001



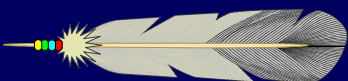
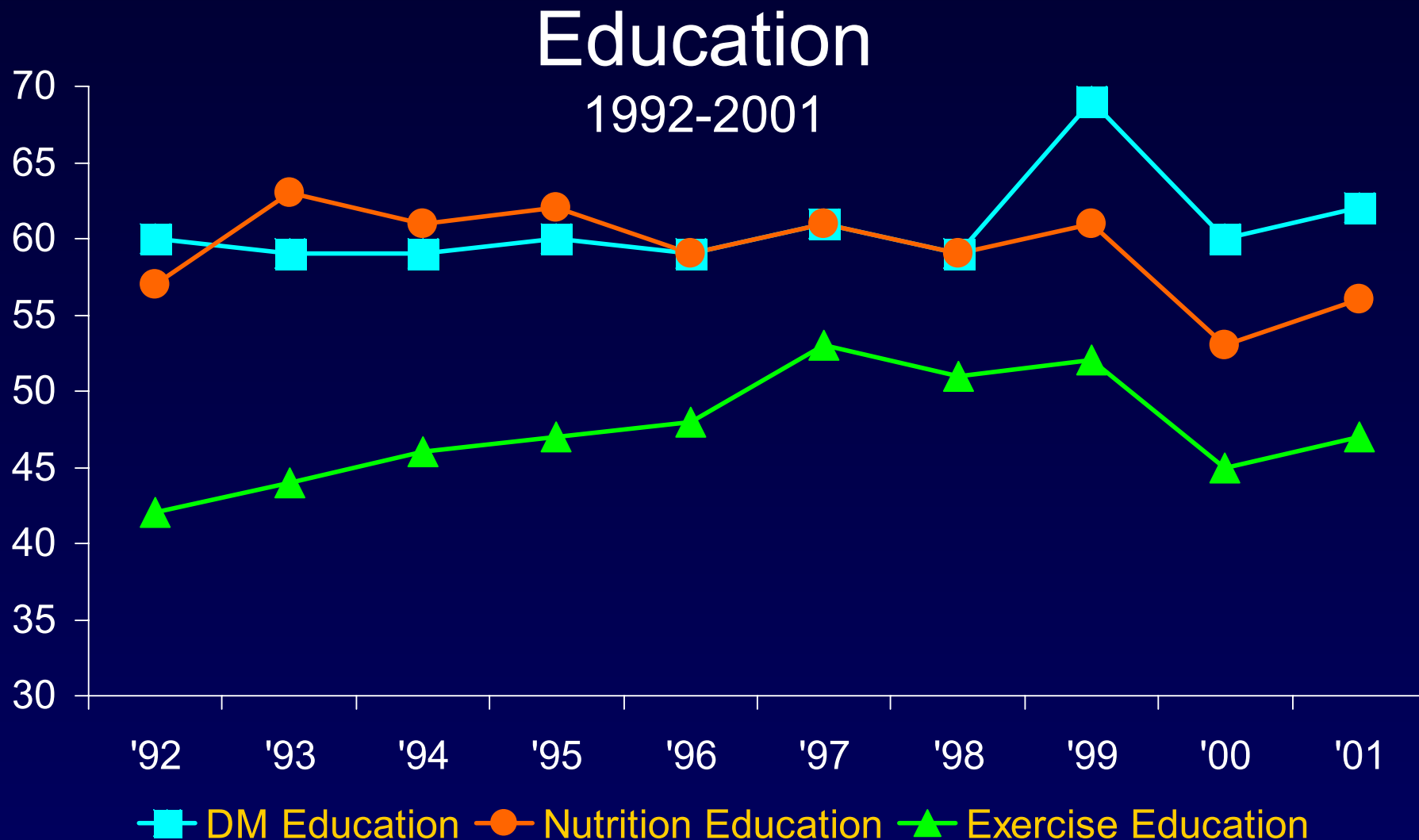
# Diabetes Care & Outcomes Audit

## Immunizations 1992-2001



Source: IHS National Diabetes  
Program Statistics 1992-2001

# Diabetes Care & Outcomes Audit



Source: IHS National Diabetes  
Program Statistics 1992-2001

# Diabetes Care & Outcomes Audit Data



- **Powerful**
- **tells a story**
- **Opportunities for improving care & a way to measure it**
- **compare ourselves to national benchmarks**
- **says “we know what we’re doing”**

# Data Issues



- **Manual vs electronic audit**
- **Definitions & cutpoints**
- **Consistency on national basis**
- **Diabetes Management System support**
- **technical assistance (Epi Centers)**
- **partners (ITSC, ORYX, GPRA, etc)**

# History of Diabetes Data in the IHS



- History of IHS
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- ***Special Diabetes Program for Indians***
- Future directions: translation of the Diabetes Prevention Program

# Special Diabetes Program for Indians

## 1997 - 2003



- Funding to tribes & tribal consortia
- Treatment *and* prevention
- Primary prevention in 2/3 programs
- Community-based approach
- Issues: accountability & evaluation;  
quantitative & qualitative data; how to  
measure & describe our experience

# Special Diabetes Program for Indians



## 1997 Balanced Budget Act

- \$30 million / yr for 5 years ('98 – '02)

## HR4577, the Consolidated Appropriations Act of 2001

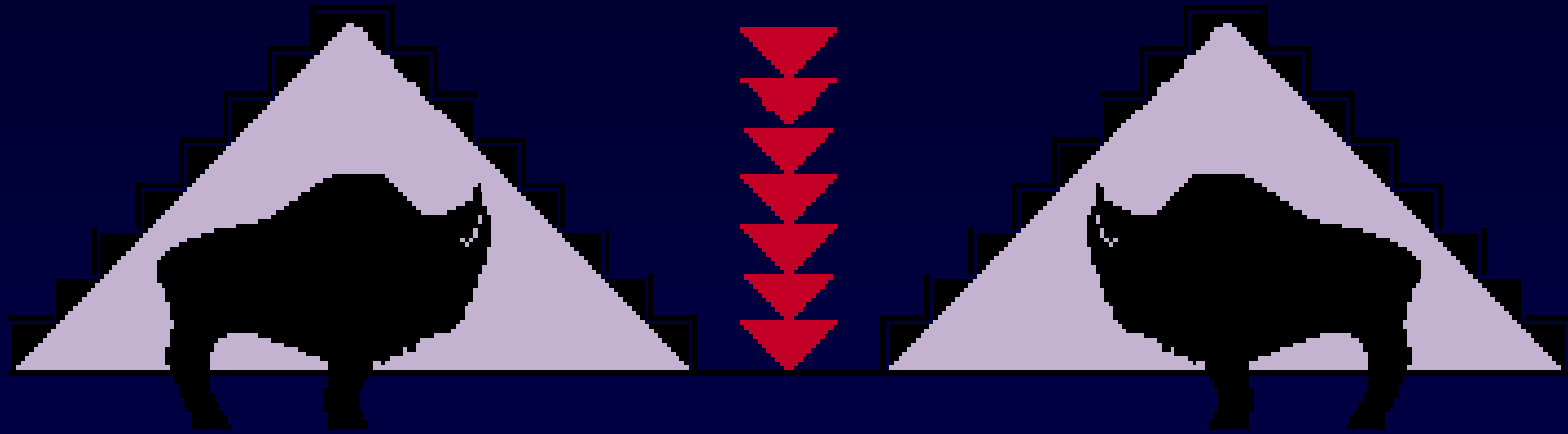
- \$70 million / year ('01-'02)
- \$100 million / year ('03)

# “Best Practices”



- Foot care
- Eye care
- CVD risk reduction
- Renal preservation
- Glycemic control
- Dental
- DM in Youth
- Systems of care
- Diabetes screening
- DM in pregnancy
- Self care management
- Nutrition / phys activity education
- School health
- Community advocacy





# Evaluation



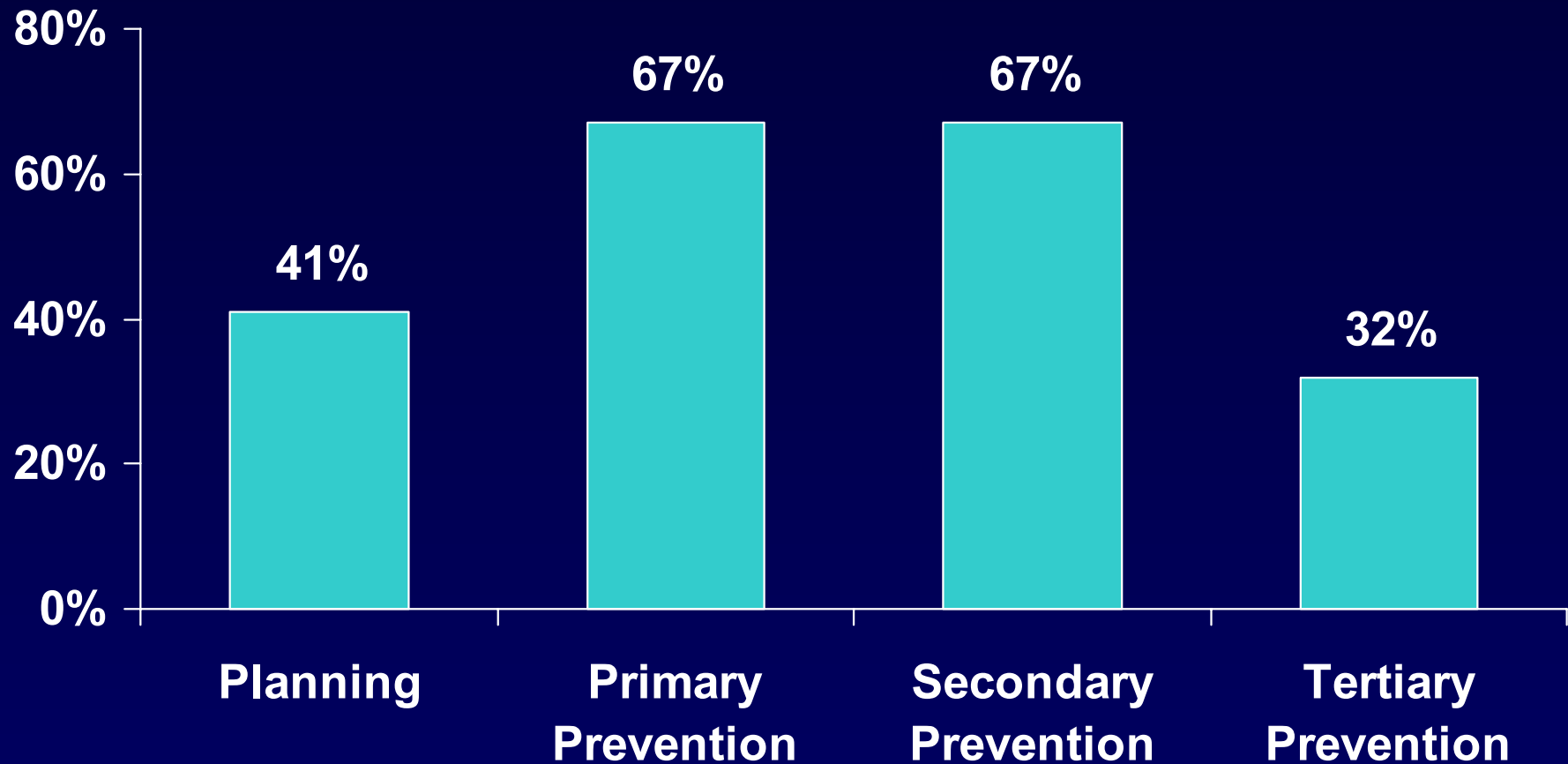
# Sources of Data on SDPI



- **Regional Meetings reports**
- **SDPI Application Kits - assessments**
- **Yearly progress reports /  
questionnaires**
- **Compendium reports**
- **SDPI – Audit “crosswalk”**

# Special Diabetes Program for Indians

## Program Emphasis



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Fiscal Year 2003  
APPLICATION KIT

Grants for Special Diabetes Programs  
For  
Indians



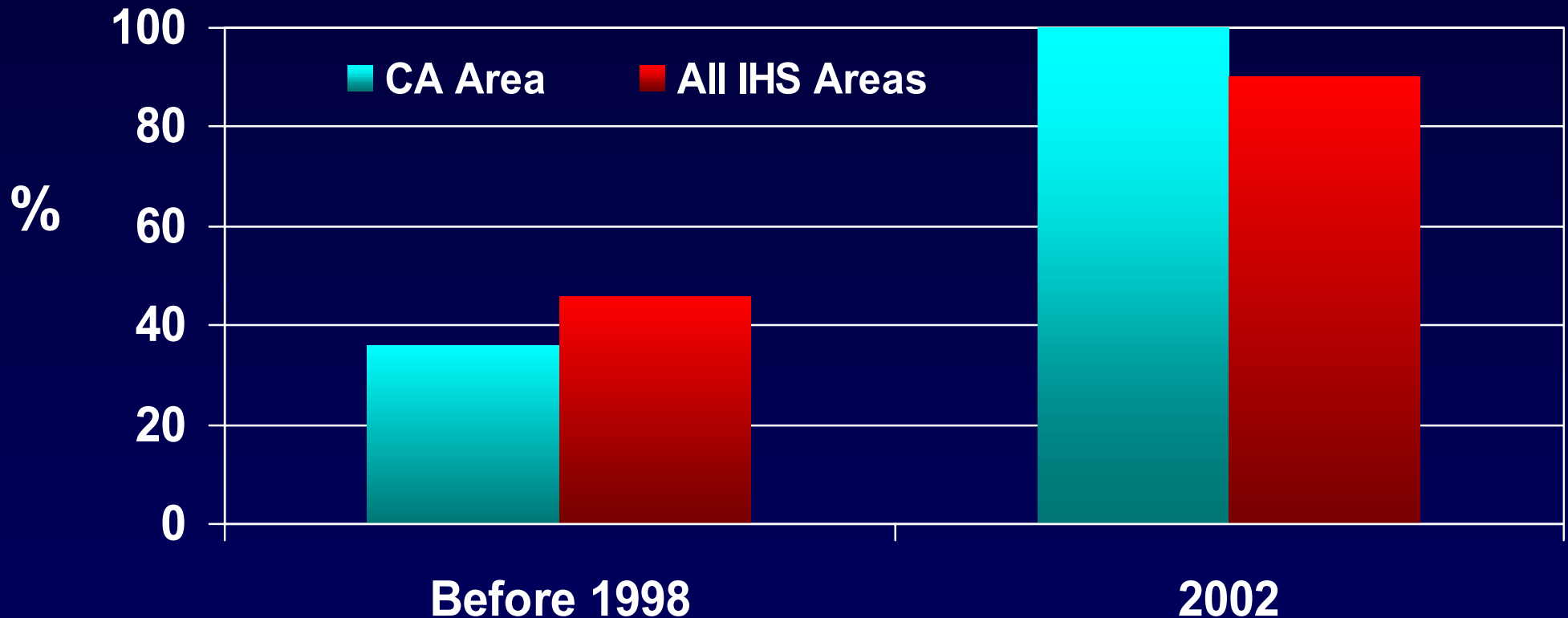
*This program described at 93.237 in the catalog of Federal Domestic Assistance*

Department of Health and Human Services  
Public Health Service  
Indian Health Service

# Special Diabetes Program for Indians

## Diabetes Registry in Place

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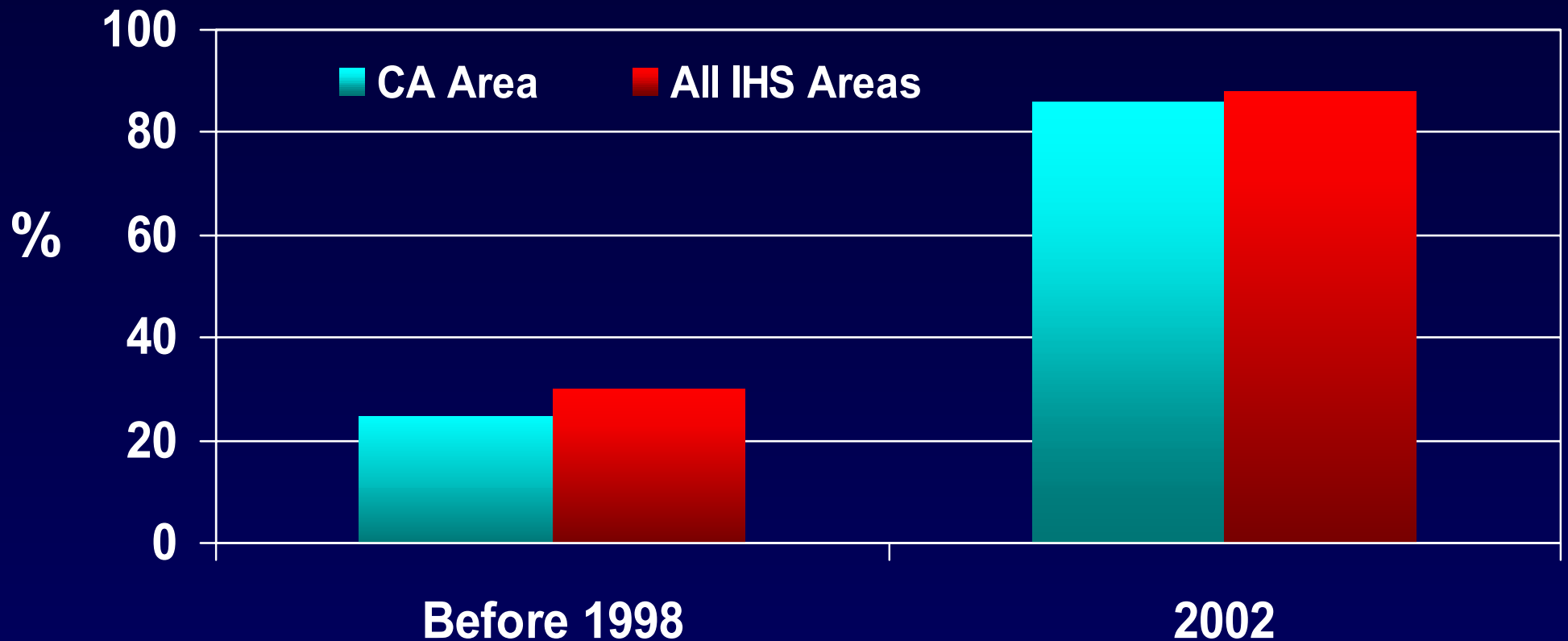


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Diabetes Team

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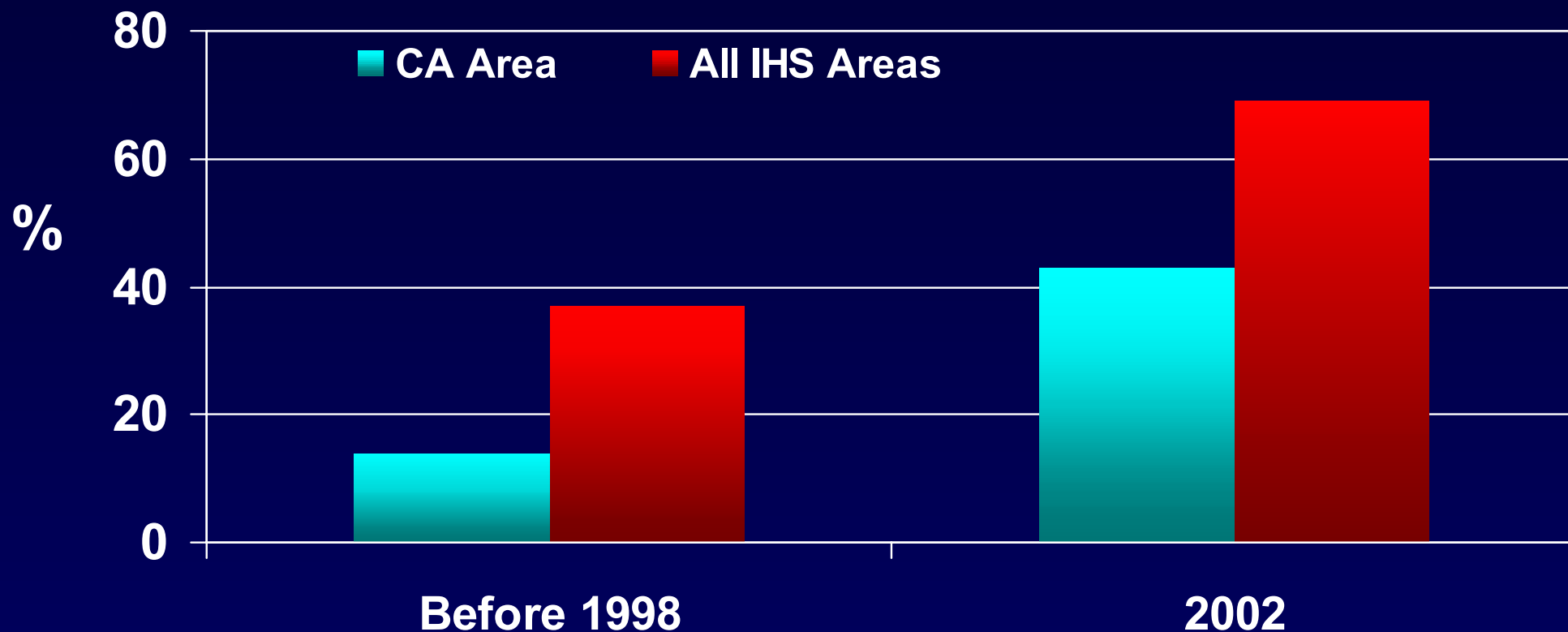


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Diabetes Clinic

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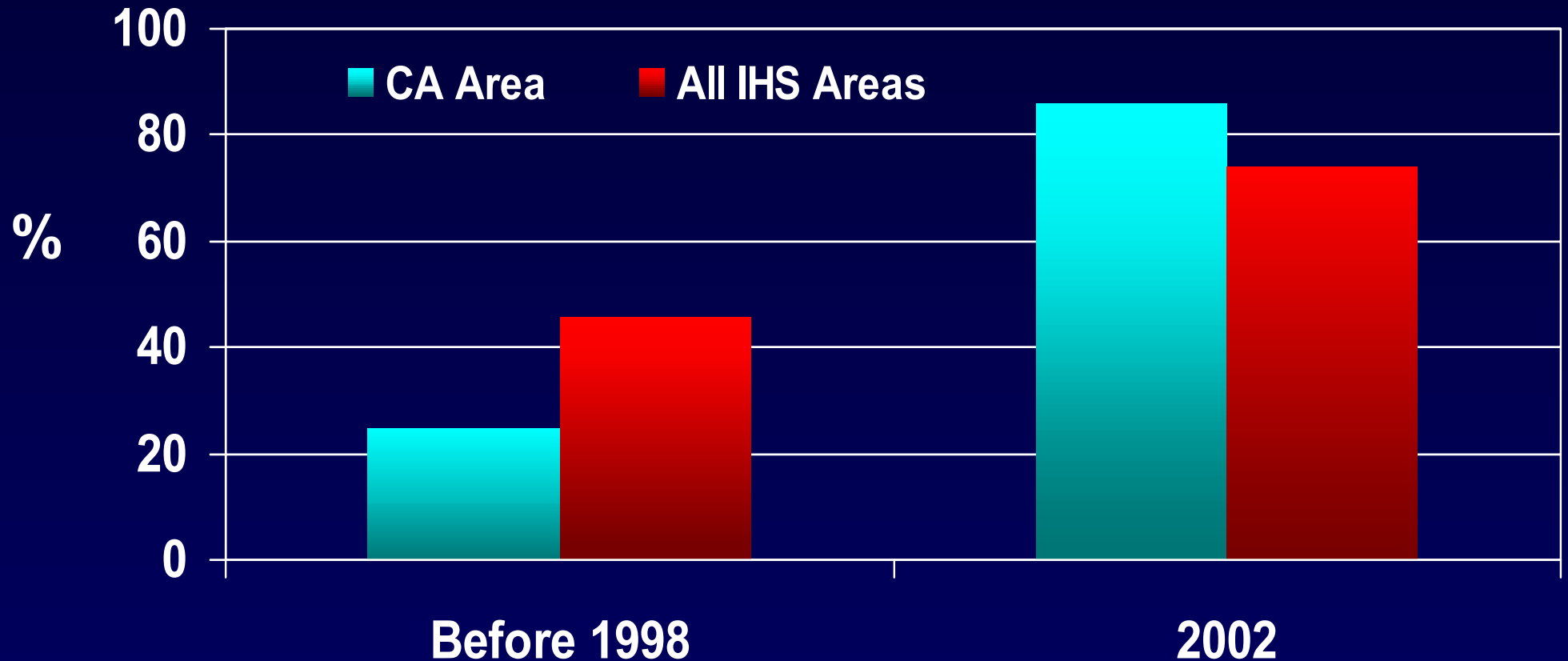


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Organized Approach to Diabetes Care

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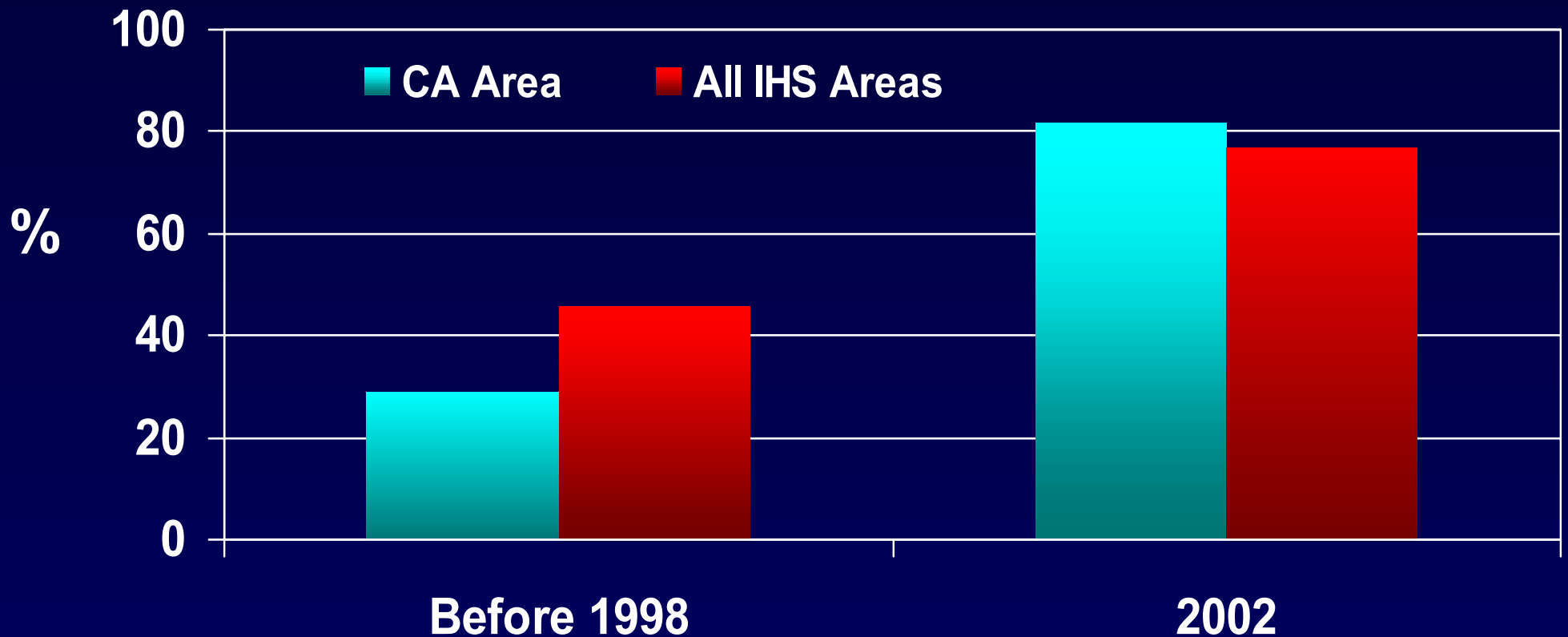
Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002



# Special Diabetes Program for Indians

## Use Diabetes Flowsheet

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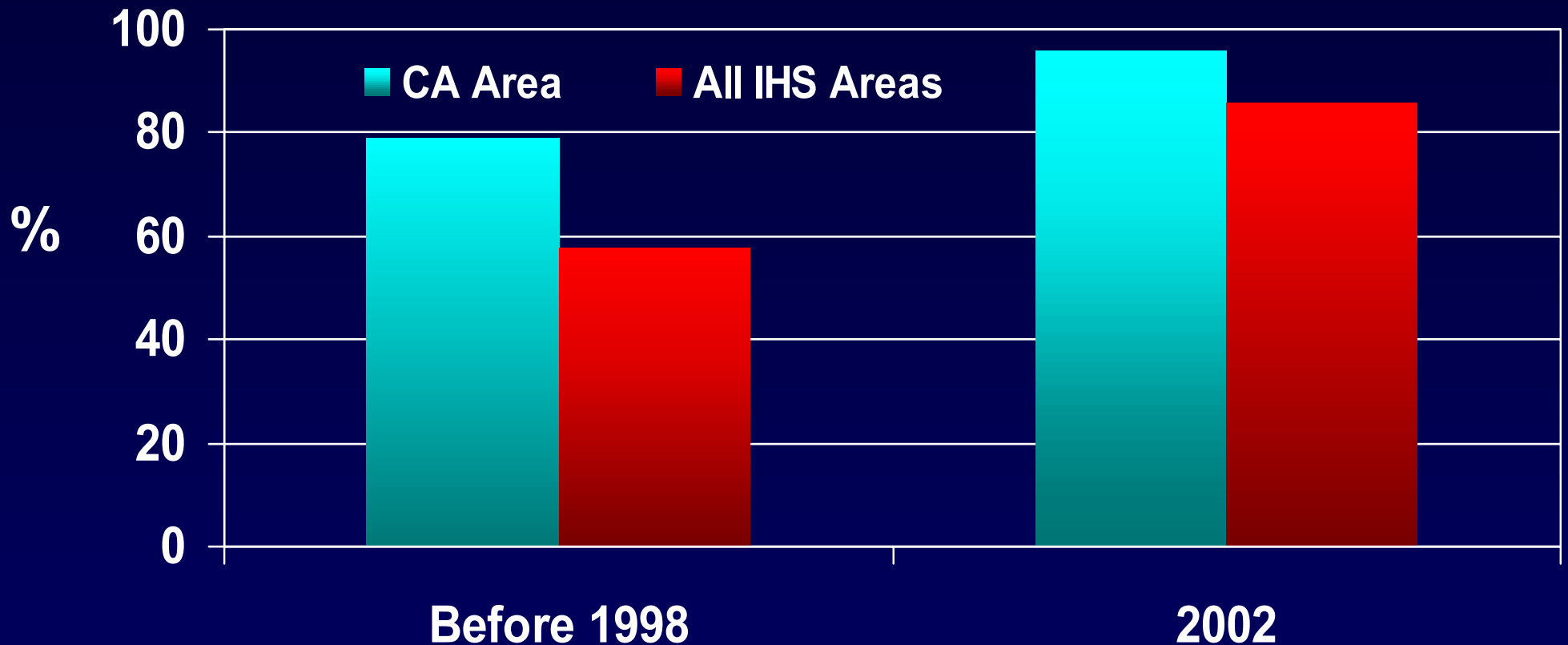


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Able to Get Diabetes Foot Exams by Specialist

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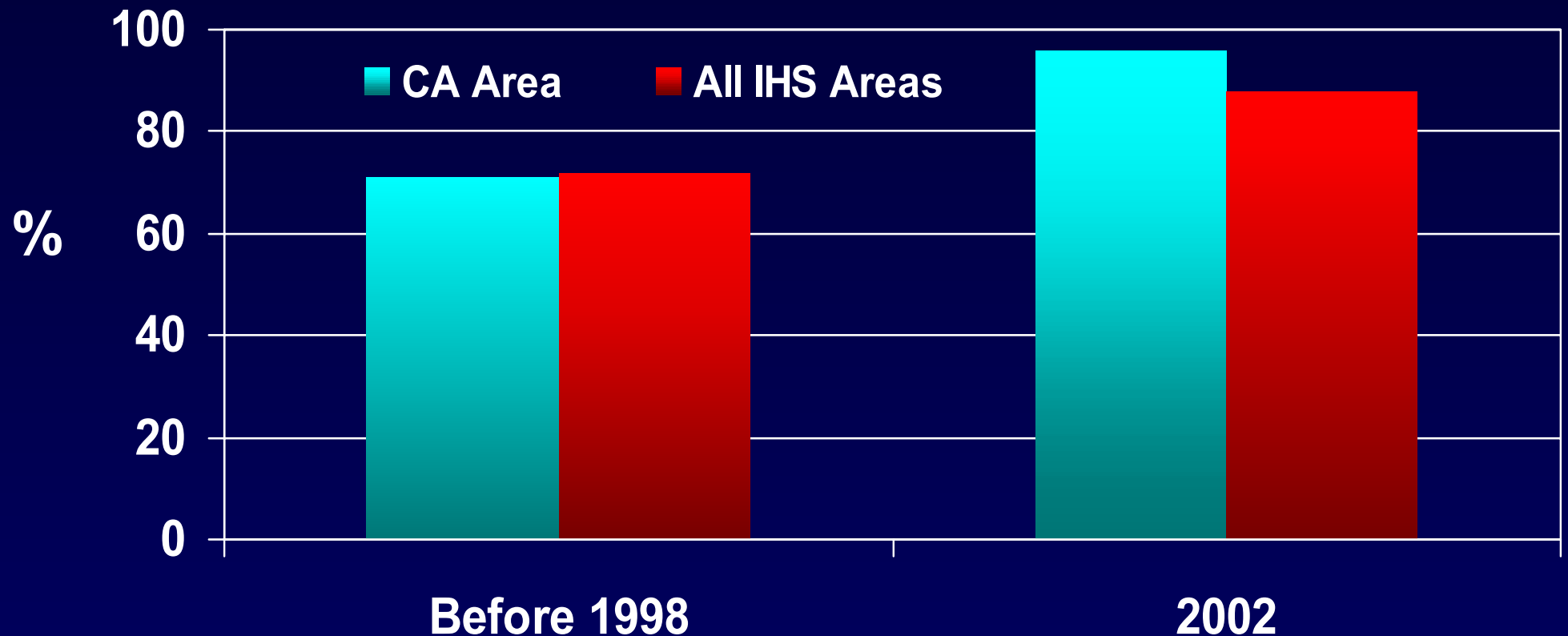


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Able to Get Diabetes Eye Exam by Specialist

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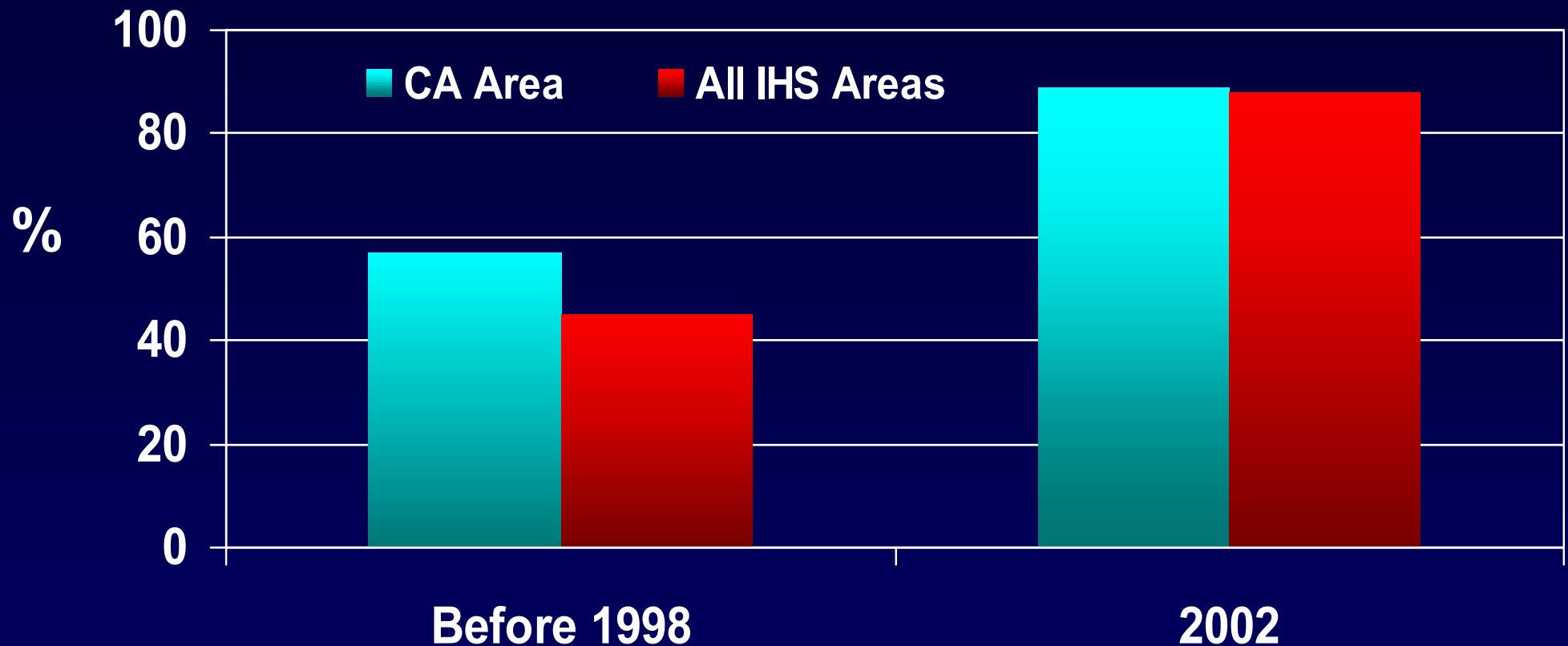


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Newer Diabetes Medications Available

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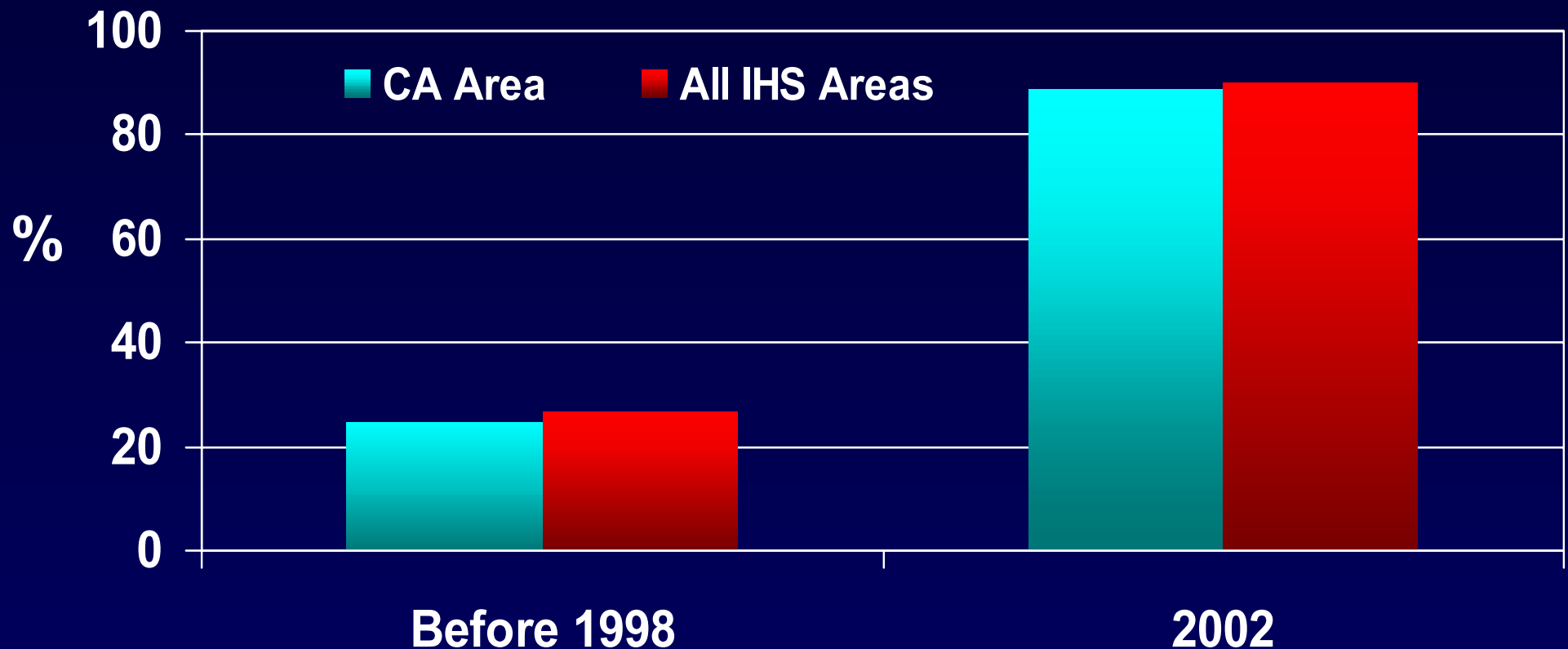


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Diabetes Education Program in Your Community

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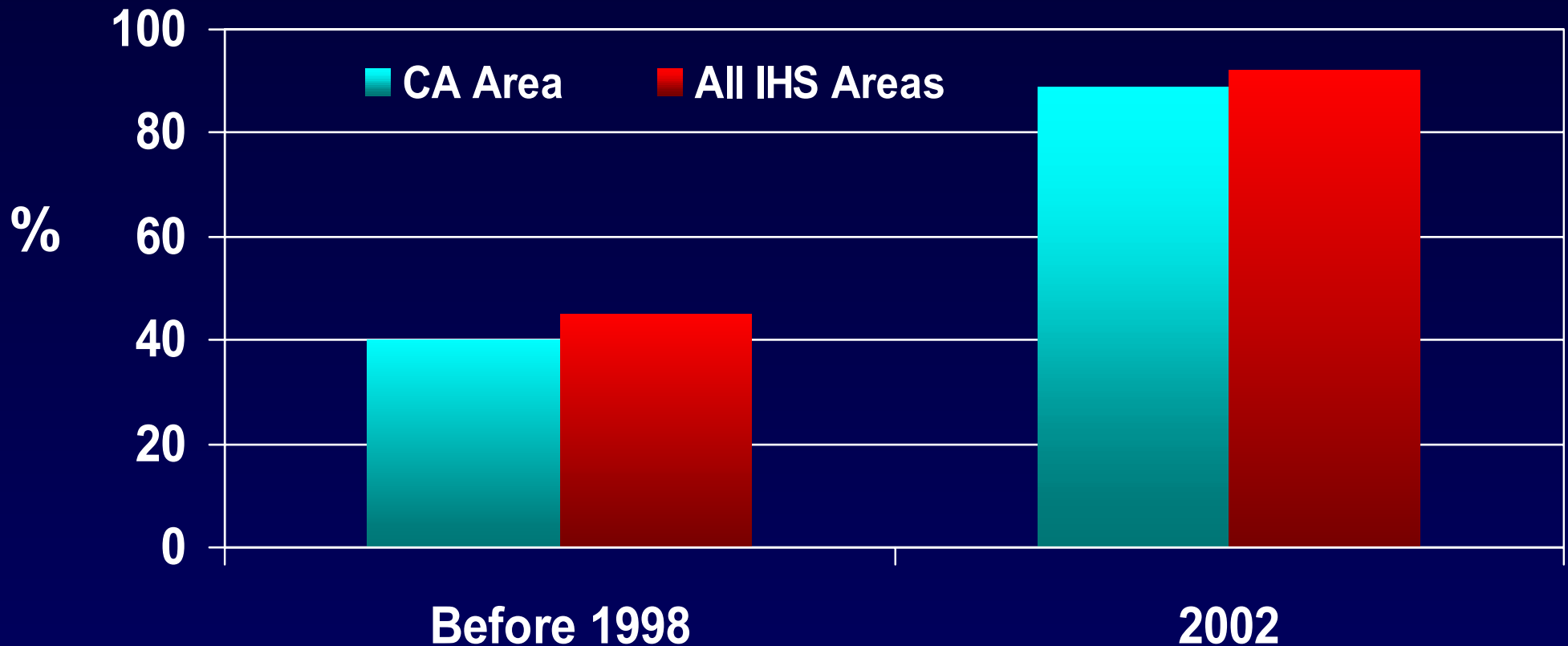


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Diabetes Awareness Program in Your Community

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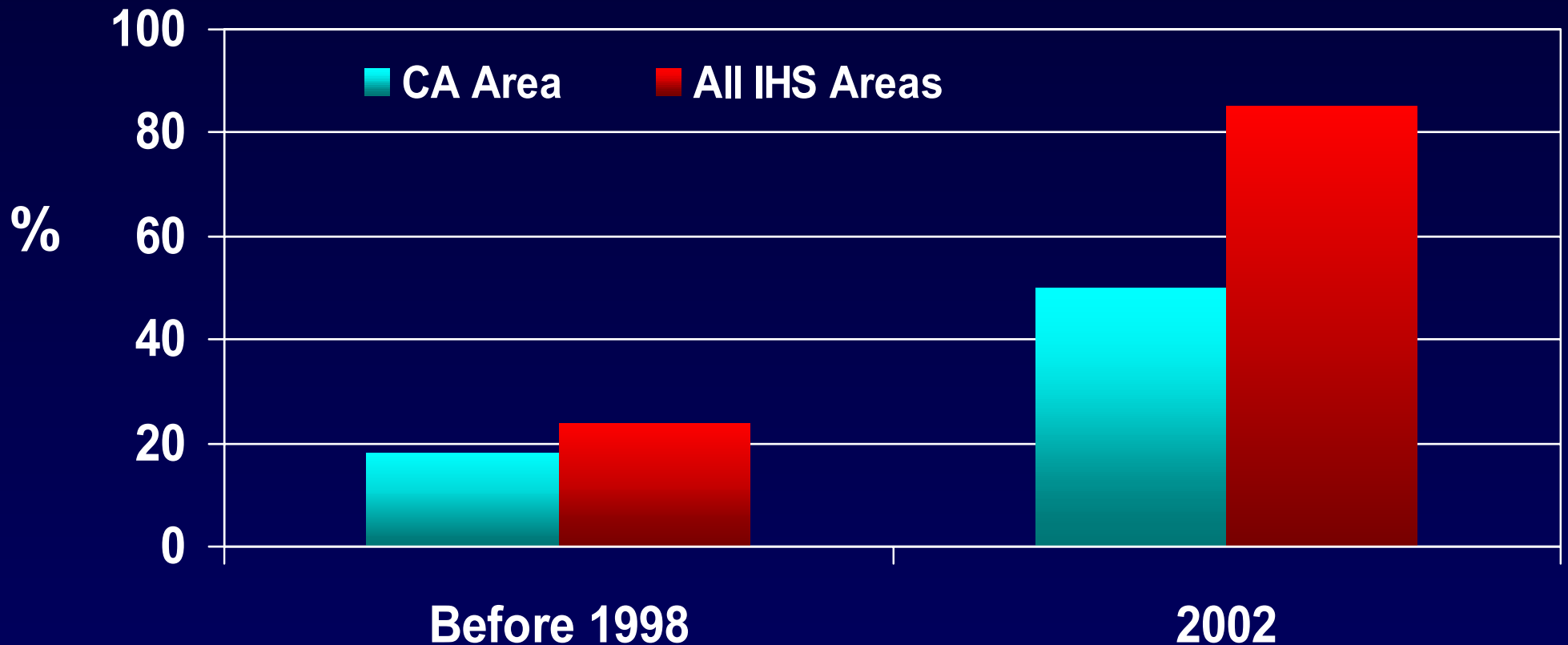


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Diabetes Awareness in Schools & Work Sites

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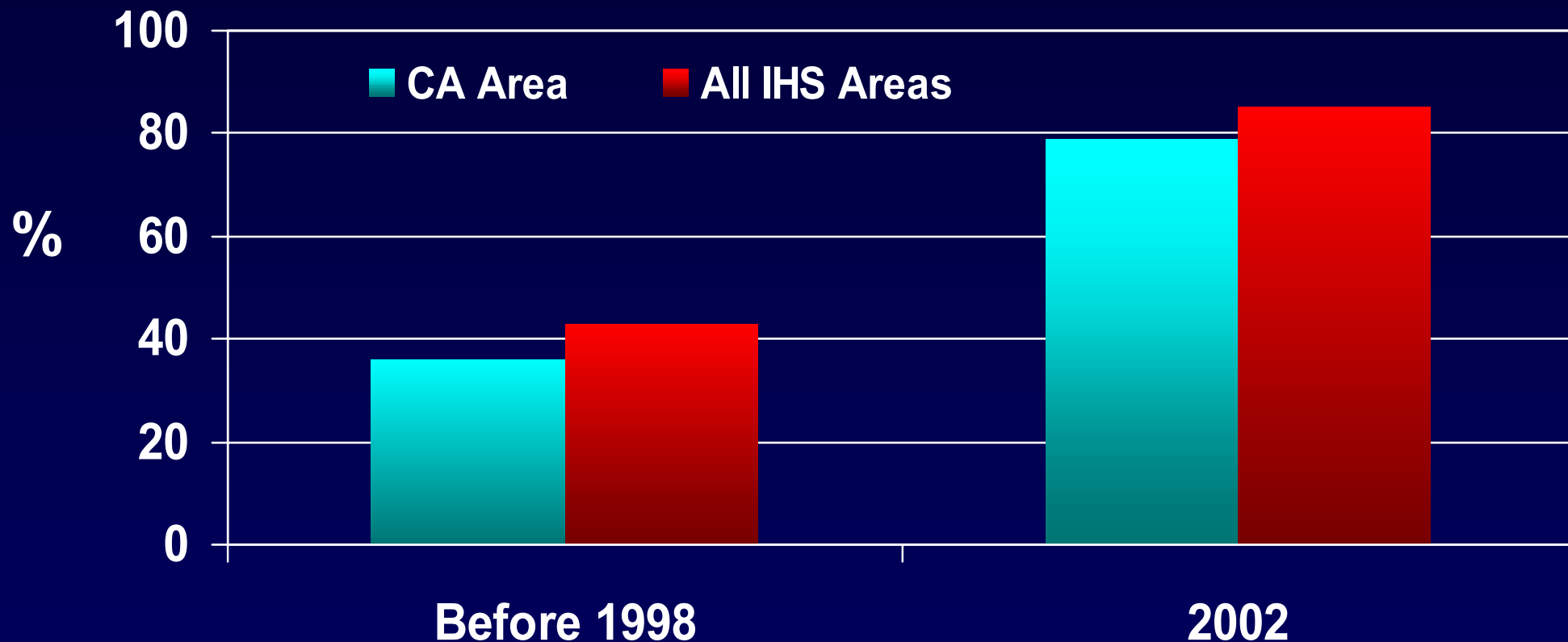


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Access to Culturally-appropriate Diabetes Education Materials

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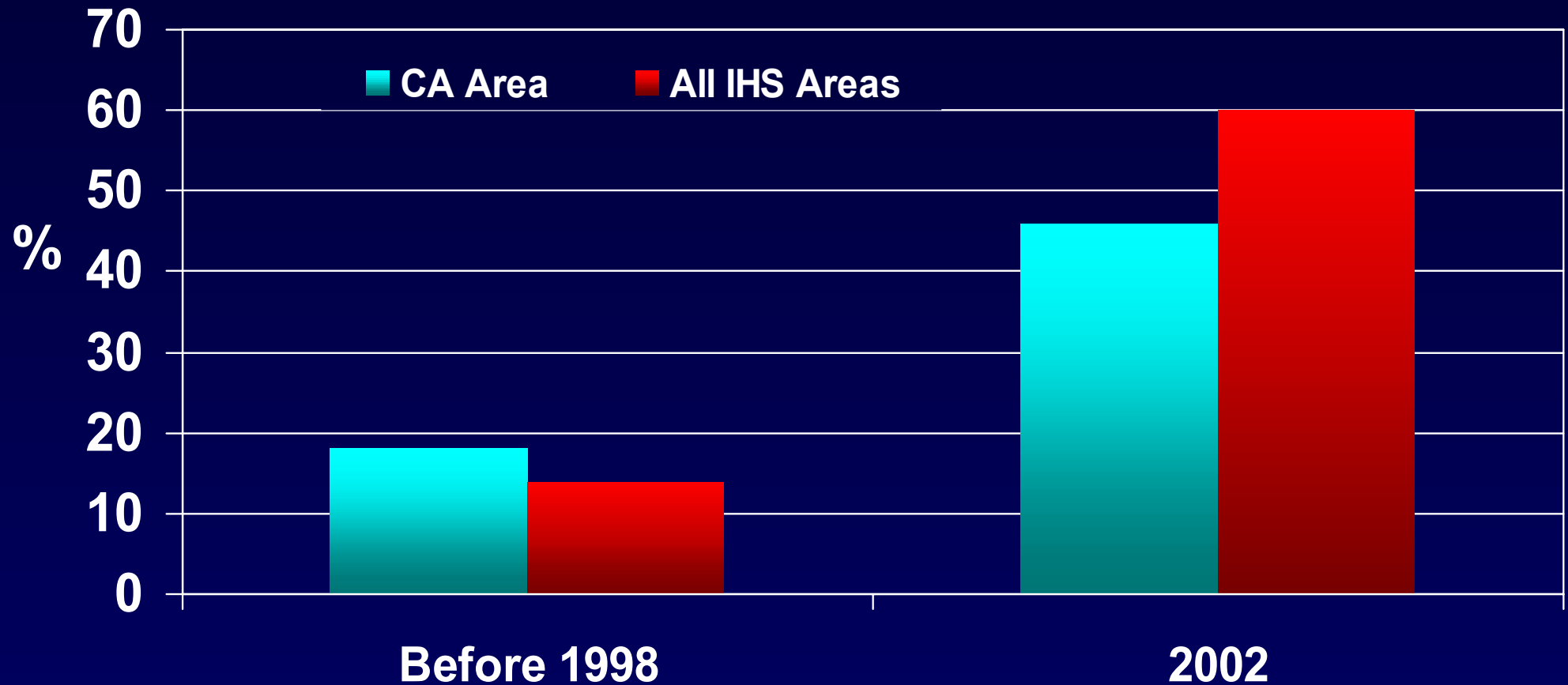
Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002



# Special Diabetes Program for Indians

## Tribal Leaders &/or Tribal Health Workers Working Together with Community on Diabetes

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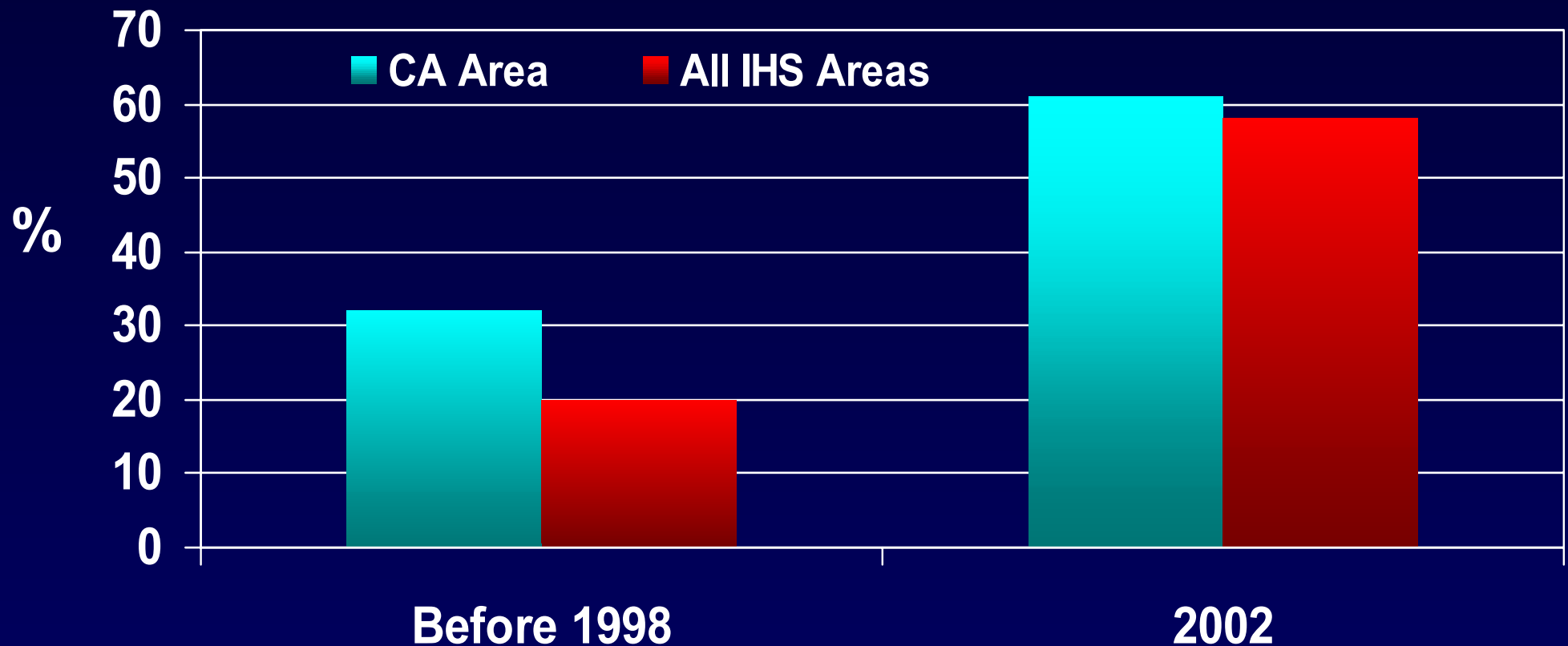


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Behavioral Services for Diabetes Available

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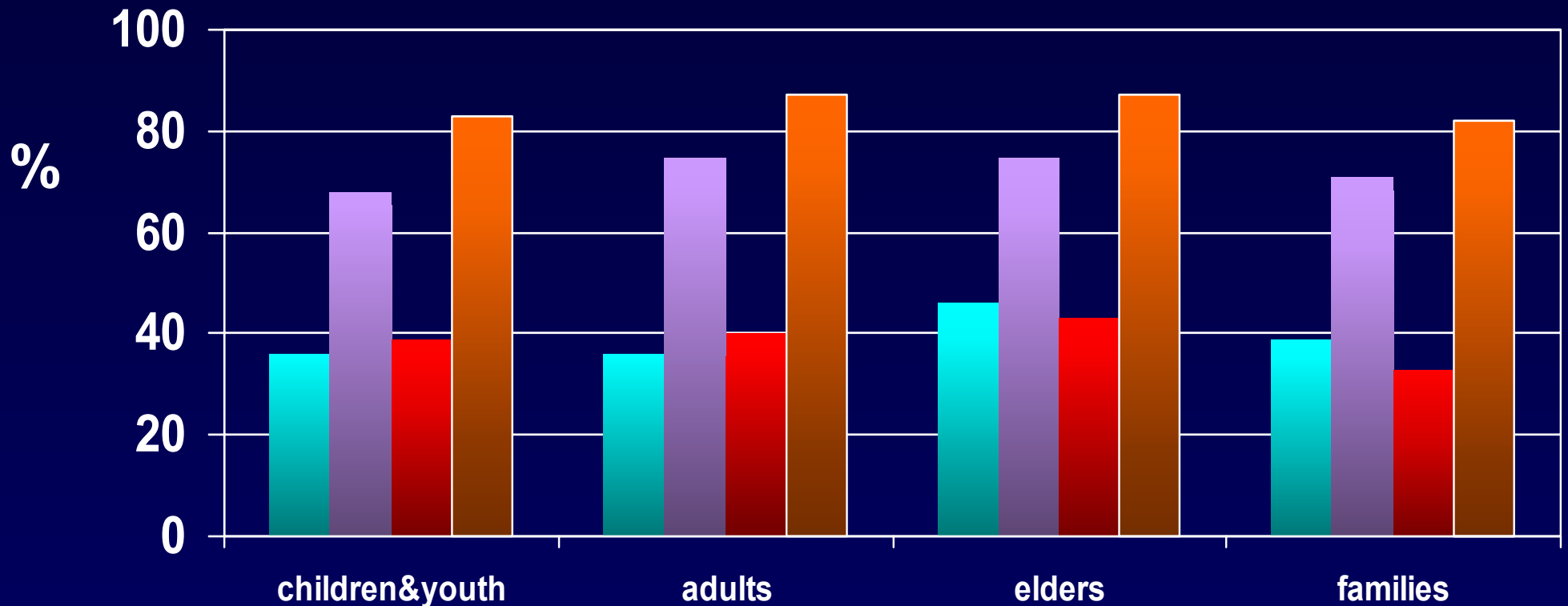


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Nutrition Education Services Available

■ CA Area before 1998 ■ CA Area 2002 ■ All Areas before 1998 ■ All Areas 2002

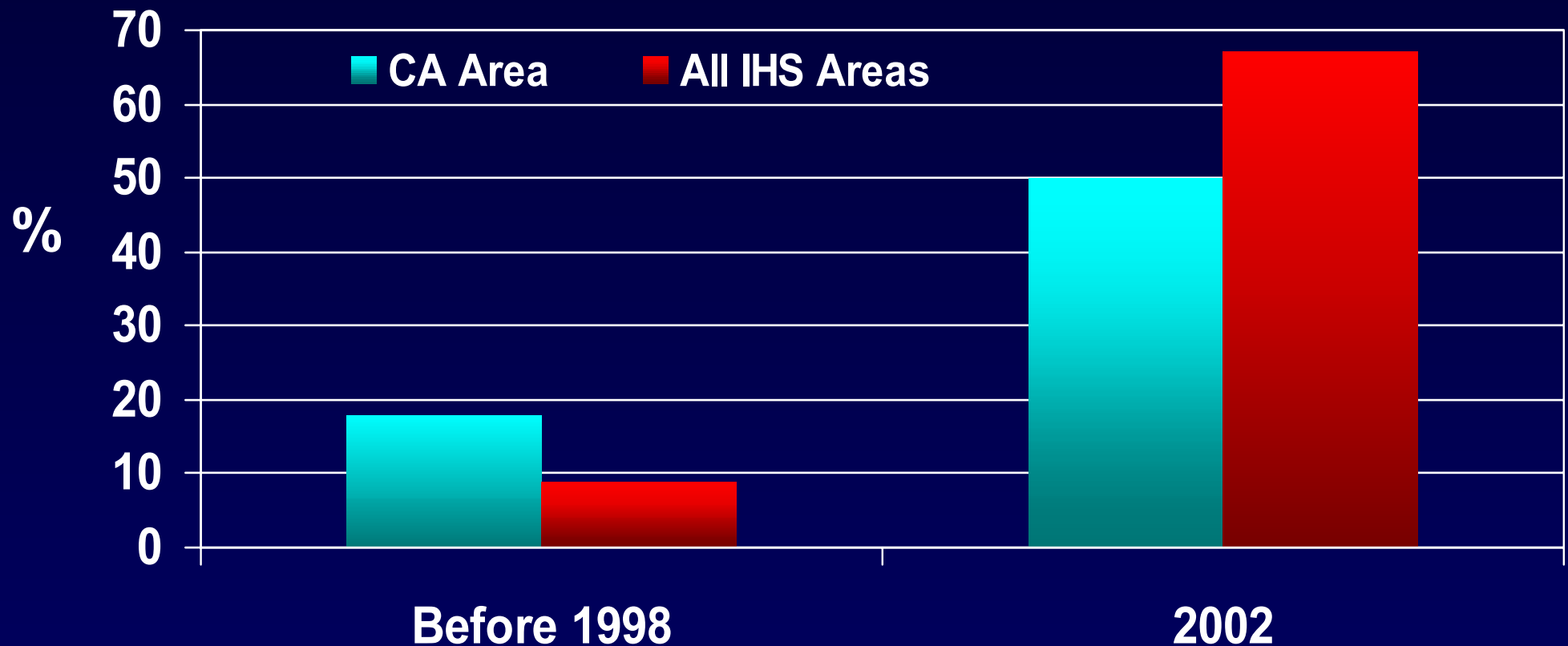


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Diabetes Prevention Programs for Children & Youth

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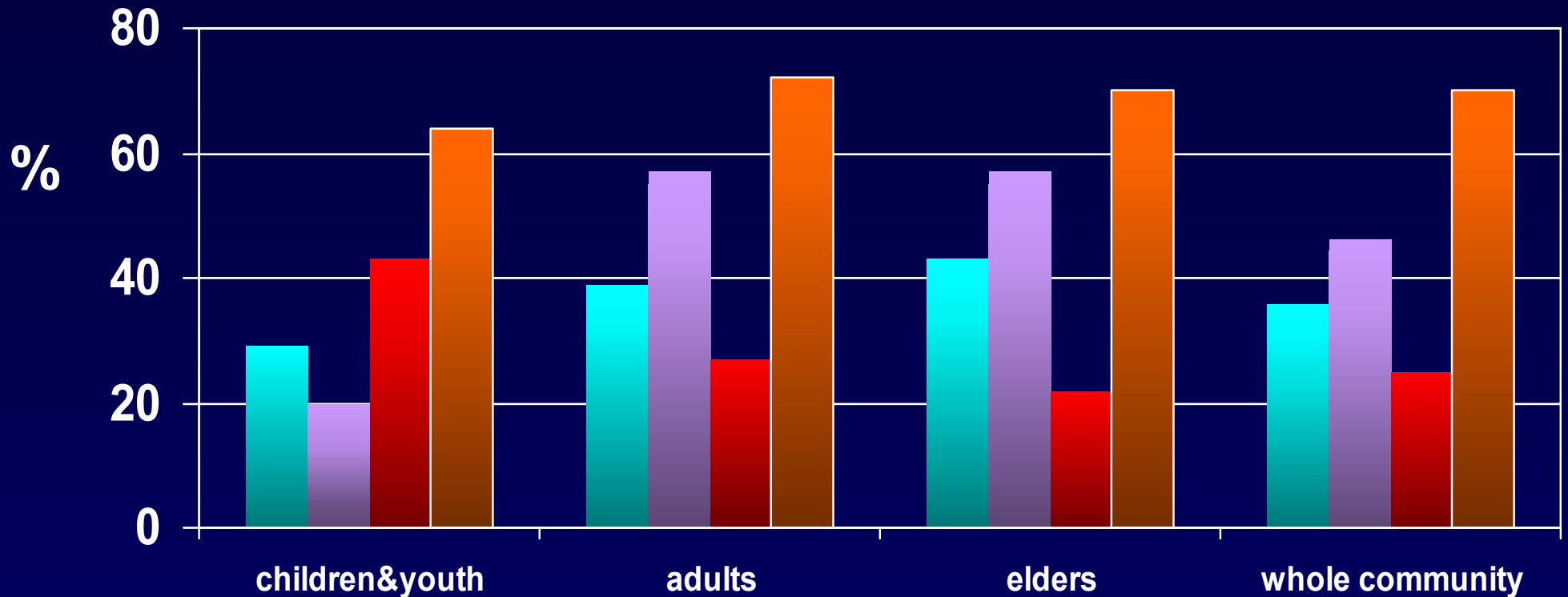


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Physical Activity Services Available

■ CA Area before 1998 ■ CA Area 2002 ■ All Areas before 1998 ■ All Areas 2002

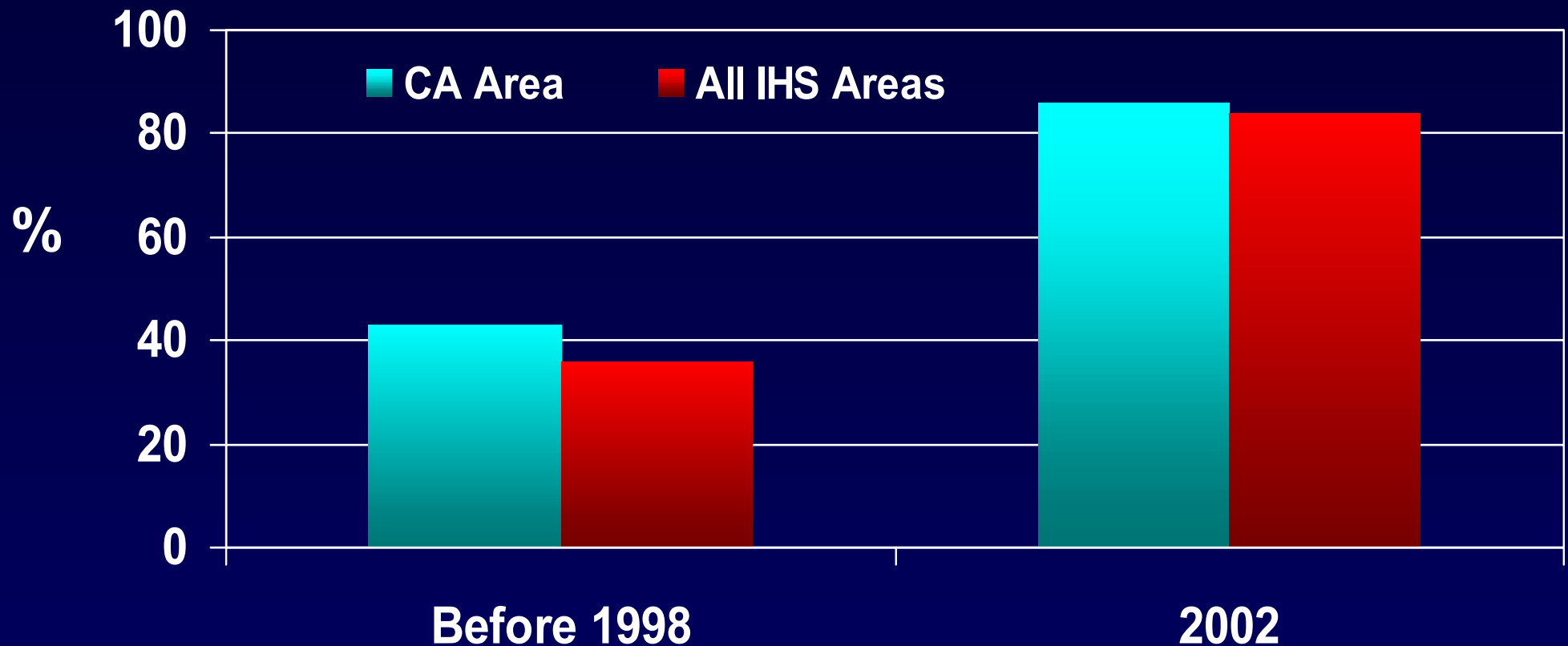


Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# Special Diabetes Program for Indians

## Counseling for People at High Risk for Diabetes

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Source: IHS National Diabetes Program  
SDPI Evaluation, 1997-2002

# The Future of the Special Diabetes Program for Indians



- **Report to Congress!!!**
- **Translate “real world” experience  
into descriptive epi terms**
- **funding beyond 2003?**
- **Primary Prevention: how to  
measure it?**

# History of Diabetes Data in the IHS



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# **The Diabetes Prevention Program (DPP)**

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- **Major clinical trial funded by NIH**
- **27 centers (including an American Indian center comprised of Zuni, Shiprock, Gila River, Salt River & Phoenix Indian Medical Center)**
- **Compared diet & exercise to the medication metformin**

# The Diabetes Prevention Program (DPP)

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- 3,234 overweight participants with impaired glucose tolerance (IGT)
- Average age 51 yrs (range: 25-85 yrs)
- 45% from ethnic/minority groups (171 American Indian participants, 5% of the study)

# Study interventions

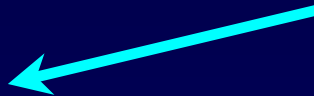
Eligible participants



Randomized



**Standard lifestyle recommendations**



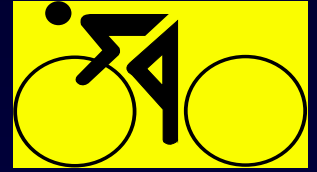
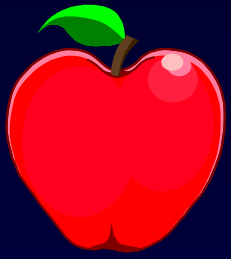
**Intensive  
Lifestyle  
(n = 1079)**



**Metformin  
(n = 1073)**



**Placebo  
(n = 1082)**



# Lifestyle Intervention

## Intensive Lifestyle Modification

A comprehensive program using a Case Management approach with the following specific aims:

- Reduction of fat and calorie intake
- Physical activity at least 150 minutes / wk
- $\geq 7\%$  loss of body weight

# Metformin

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- **A medication approved for use in type 2 diabetes**
- **Mechanism of action (how it works)**
  - **Lowers glucose (sugar) production by the liver**
  - **Increases glucose uptake and use by the muscles and organs**
  - **Decreases glucose uptake by the gut**
  - **Does not stimulate insulin production**

# DPP Study Results

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- Participants from the lifestyle group reduced their risk of getting type 2 diabetes by **58%**
- Participants from the metformin group reduced their risk of getting type 2 diabetes by **31%**

# DPP Study Results

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- Lifestyle intervention worked very well in elderly (>60 yrs), reducing development of diabetes by **71%**
- Metformin was not effective in older participants or in less overweight

# What do the results of the DPP mean to ITUs?

- 
- **Screening** for diabetes AND for prediabetes in AI/AN communities
  - Create **lifestyle programs** for diabetes prevention; **case management** approach
  - **Purchase metformin** for diabetes prevention



# Short-term Plans for Use of the DPP Results



- Press releases in the Indian press
- Feature DPP at the national TLDC diabetes conference
- Interview American Indian participants of the DPP
- Special edition of the Health for Native Life magazine

# Long-term Plans for Use of the DPP Results

- Define screening criteria & issues
- Use experience from grant programs & others to develop lifestyle programs
- Advocate to Congress for additional funds to purchase metformin and lifestyle program equipment & training

# Health For Native Life

Number 2



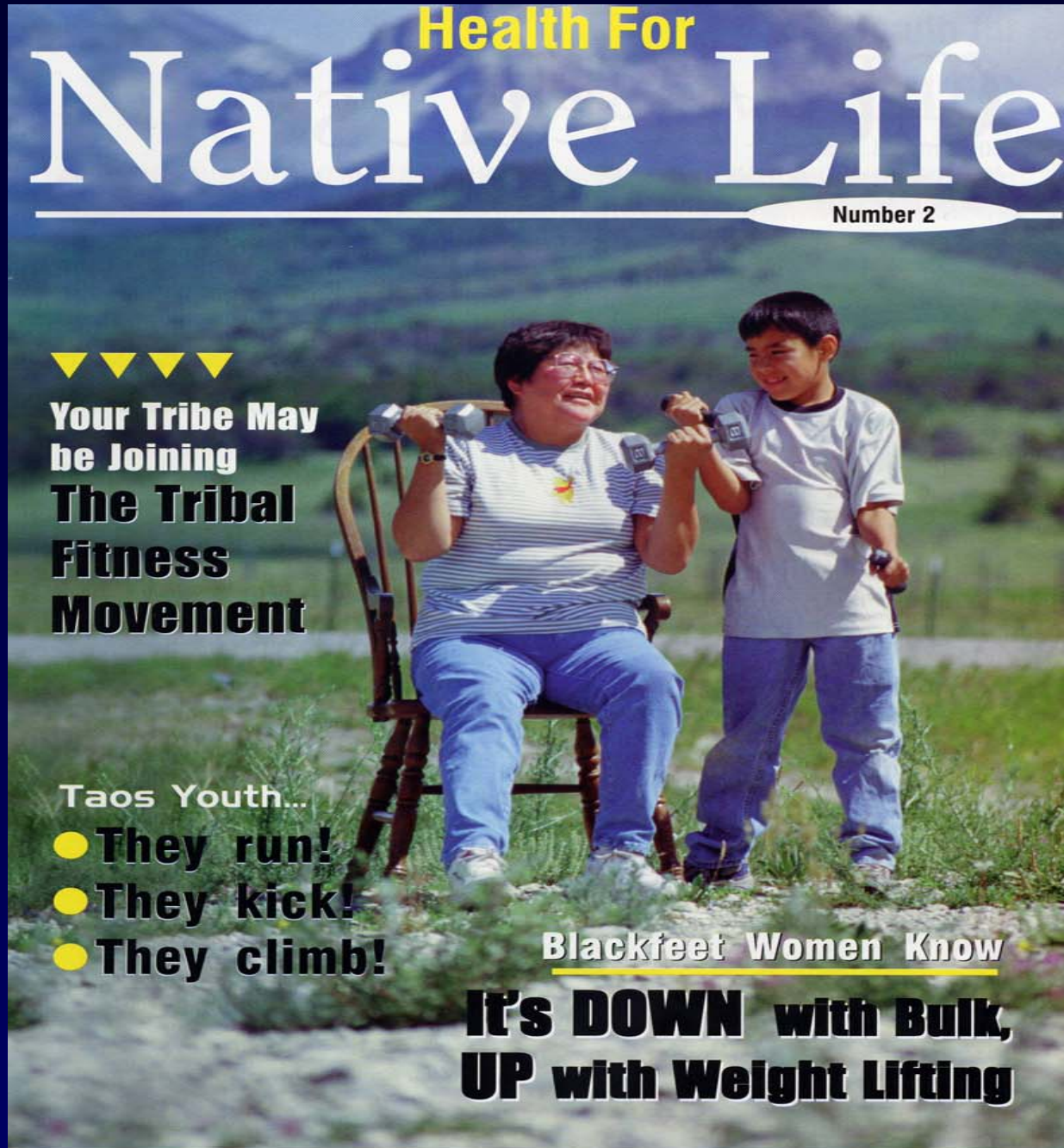
**Your Tribe May  
be Joining  
The Tribal  
Fitness  
Movement**

**Taos Youth...**

- **They run!**
- **They kick!**
- **They climb!**

**Blackfeet Women Know**

**It's DOWN with Bulk,  
UP with Weight Lifting**



**What does DPP  
translation mean  
to AI/AN  
communities?**

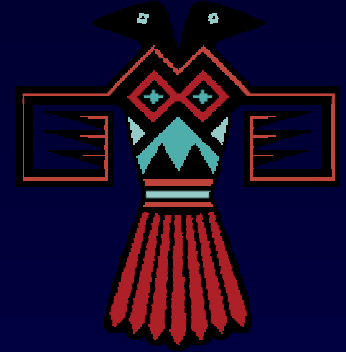
**HOPE!**





# Tribal Communities





"Not everything that  
can be counted counts,  
and not everything that  
counts can be counted."



Albert Einstein

# **IHS National Diabetes Program**



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